FEDOROV, B.M.

Conditioned reflex modifications of cardiac rhythm. Biul.eksp. biol.i med. 37 no.2:17-22 F '54. (MLRA 7:6)

1. Iz Instituta patofiziologii i eksperimental'noy terapii AMN SSSR (dir. akademik A.D.Speranskiy), Moskva.
(REFLEX, CONDITIONED,
*heart thythm variations in animals)
(HEART, physiology,
*rhythm, conditioned reflex variations in animals)

FEDOROV, B.M.

Restoration of disturbed cardiac rhythm under the influence of a novocaine block of extracardial nerve formations and some other interventions of the nervous system. Biul.eksp.biol. i med. 43 no.1 supplement:21-26 '57. (MIRA 10:3)

1. Iz Instituta normal'noy i patologicheskoy fiziologii (dir. - deystvitel'nyy chlen AMN SSSR V.N.Chernigovskiy) AMN S SSR, otdel obshchey i eksperimental'noy patologii (zav. - akad. A.D.Speranskiy), ostsillograficheskiy kabinet (zav. Ye.A.Gromova) i laboratoriya eksperimental'noy terapii (zav. A.M.Chernukh). Predstavlena akademikom A.D.Speranskim.

(ARRHYTHMIA, exper.
eff. of procaine block of extracardiac nerves)
(PROCAINE, eff.
block of extracardiac nerves on exper. arrhythmia)

FEDOROV, B.M.

Effect of unconditioned food refelxes on cardiac rhythm activity under pathological conditions (diphtherial intoxication, acute disorders of coronary circulation, pharmacological influences). Biul. eksp. biol. i med. 51 no.5:33-38 My '61. (MIRA 14:8)

1. Iz laboratorii infektsionnoy patologii (zav. - chlen-korrespondent AMN SSSR A.Ya.Alymov) Instituta normal'noy i patologicheskoy fiziologii (dir. - deystvitel'nyy chlen AMN SSSR V.V.Parin) AMN SSSR, Moskva. Predstavlena deystvitel'nym chlenom AMN SSSR V.V.Parinym.
(REFLEXES) (HEART) (DIPHTHERIA)
(CORONARY VESSELS--DISEASES)

FEDOROV, B.M.

Disorders in cardiac activity and causes of sudden death in diphtheria. Vest. AMN SSSR 16 no.5:38-46 '61. (MIRA 14:12)

1. Institut normal'noy i patologicheskoy fiziologii AMN SSSR.
(DIPHTHERIA) (ARRHYTHMIA) (DEATH)

FEDOROV, B.M.

[Effect of the nervous system on arrhythmia of the heart] Vliianie nervnoi sistemy na aritmii serdtsa; materialy dokladov na konferentsii Instituta, zasedanii Moskovskogo obshchestva patofiziologov i kardiorevmatologicheskoi sektsii Moskovskogo terapevticheskogo obshchestva. Moskva, In-t normal'noi i patologicheskoi fiziologii, 1963. 101 p. (MIRA 16:8)

(ARRHYTHMIA) (NERVOUS SYSTEM)

GROMOVA, Ye.A.; FEDOROV, B.M.; TKACHENKO, K.N.; PODREZOVA, N.A.; PROVODINA, V.N.

Correlation between disorders of the cardiac activity and functional changes in the brain in experimental diphtheria intoxication. Pat. fiziol. i eksp. terap. 8 no.5:31-35 S-O '64. (MIRA 18:12)

1. Institut normal'noy i patologicheskiy fiziologii (direktor - deystvitel'nyy chlen AMN SSSR prof. V.V.Parin) AMN SSSR, Moskva. Submitted February 16, 1963.

CHERNUKH, Aleksey Mikhaylovich; FEDOROV, B.M., red.

[Infection focus of inflammation; problems of disease, recovery and treatment] Infektsionnyi ochag vospaleniia; voprosy zabolevaniia, vyzdorovleniia, lecheniia. Moskva, Meditsina, 1965. 322 p. (MIRA 19:1)

FEDOROV, B.M. (Moskva)

Effect of the vomiting reflex on cardiac rhythm and its role in defense and pathological reactions of the body during pharmacological actions and disorders of coronary circulation. Pat. fiziol. i eksp. terap. 5 no.3:20-26 My-Je '61. (MIRA 14:6)

1. Iz laboratorii infektsionnoy patologii (zav. - chlen-korrespondent AMN SSSR prof. A.Ya. Alymov) Instituta normal'noy i patologicheskoy fiziologii (dir. - deystvitel'nyy chlen AMN SSSR prof. V.V.Parin) AMN SSSR.
(VOMITING) (ARRHYTHMIA)

FEDOROV, B.M.

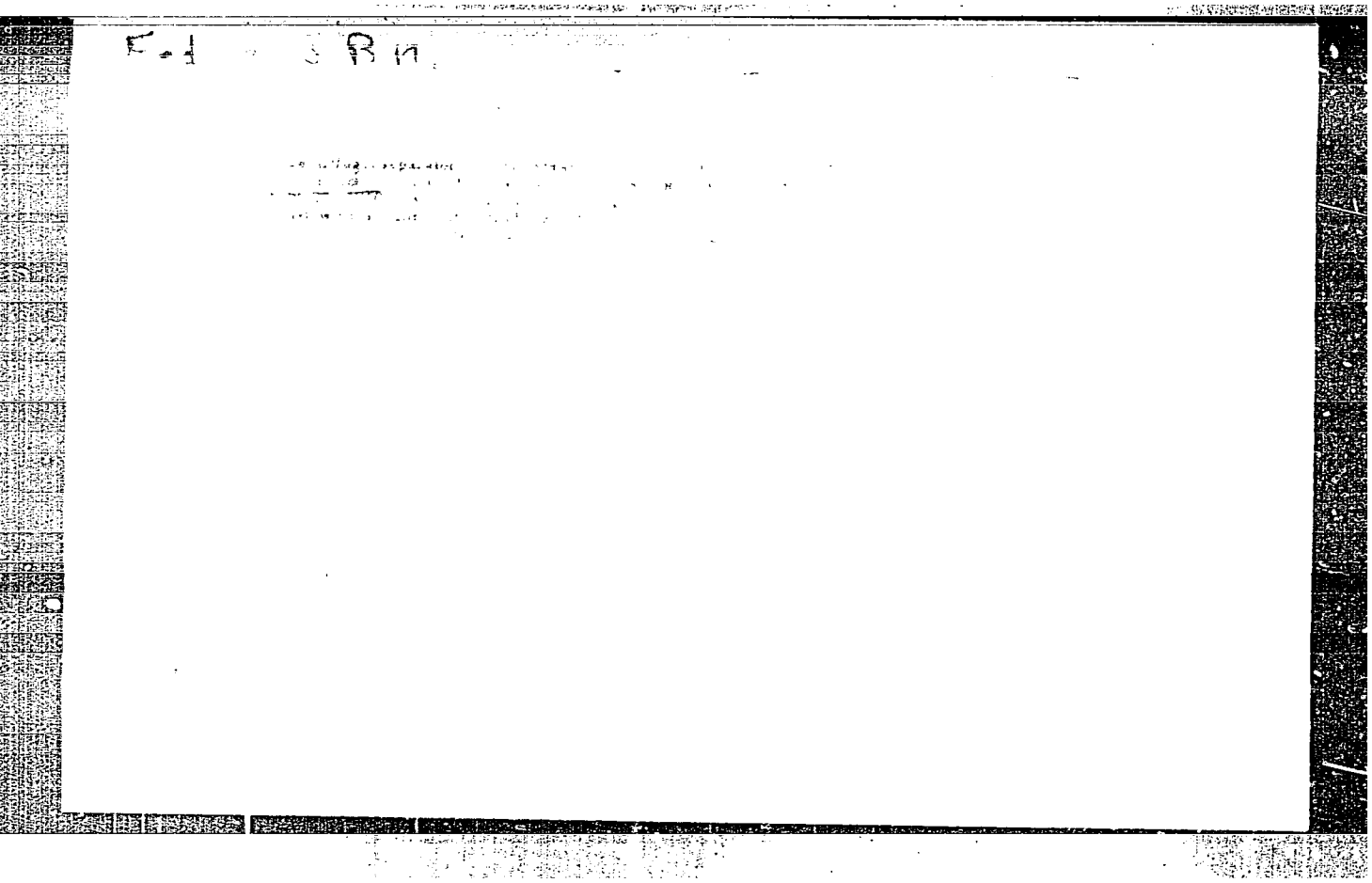
Effect of a dynamic stereotype of conditioned food reflexes and neurotic conditions on cardiac rhythm in normal and distorted cardiac activity. Biul. eksp. biol. i med. 51 no.3:37-42 Mr '61.
(MIRA 14:5)

1. Iz laboratorii infektsionnoy patologii (zav. - chlen-korrespondent AMN SSSR A.Ya.Alymov) Instituta normal'noy i patologicheskoy fiziologii (dir. - deystvitel'nyy chlen AMN SSSR V.V.Parin) AMN SSSR, Moskva. Predstavlena deystvitel'nym chlenom AMN SSSR V.V.Parinym.
(CONDITIONED RESPONSE) (HEART)

FEDOROV, B. N.

"Experimental Investigation of the Volume Compressibility of Soils," Zhur. Tekh. Fiz., 14, No.9, 1944

All-Union Sci.Res. Inst. of Water Supply, Sewerage, Hydraulic Engineering and Engineering Hydrogeology



SOV/137-58-9-18269

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 6 (USSR)

AUTHOR: Fedorov, B. N.

TITLE: New Two-stage Grinding Installation (Novaya izmel'chitel'naya dvukhstadial'naya ustanovka Mekhanobra 103-Us)

PERIODICAL: Obogashcheniye rud, 1957, Nr 5, pp 51-53

ABSTRACT: The installation is intended for laboratory investigation of wet grinding of ores. Two 416x445 mm ball mills, two spiral classifiers, two hoppers with drum feeders and a device for sampling are specified for it. The tentative output of each mill is ~90 kg/hour.

1. Industrial equipment--Installation 2. Ores --Processing

I. M.

Card 1/1

DUBROVIN, B.N.; FEDOROV, B.N.

Results of testing inertial crushers and centrifugal mills. Obog. rud. 7 no.3:34-38 '62. (MIRA 16:4)
(Tyrnyauz—Crushing machinery—Testing)

FEDOROV, B.N., starshiy leytenant med.sluzhby

Prevention and treatment of suppurative diseases of the hand and fingers. Voen.-med. zhur. no. 2:76 F '61. (MIRA 14:2)
(HAND—DISEASES)

FEDOROV, B.P., kand.tekhn.nauk

Review of M.M.Shchukin's book "Couplings for motor vehicles and tractors." Avt.prom. 29 no.10:47 O '63. (MIRA 16:10)

SOV/113-58-2-9/15

AUTHORS: Zakin, Ya. Kh., Fedorov, B.P., Candidates of Technical Sciences

TITLE: The Interaction of a Truck Tractor and a Trailer During Acceleration Through the Gears (Vzaimodeystviye tyagacha i pritsepa pri razgone na peredachakh)

PERIODICAL: Avtomobil'naya promyshlennost', 1958, Nr 2, pp 31 - 34 (USSR)

ABSTRACT: The stress in a GAZ-63 truck and a 2-AP-2 trailer during acceleration are investigated here. There are three stages in every acceleration cycle: the transition from one gear to another; engaging the gear; and letting in the clutch (Figure 1). The stress on the hook of the truck tractor was determined by means of a tensiometric shaft (Figure 2). The longitudinal accelerations of the trailer were measured by a specially developed accelerometer (Figure 3). The circuit diagram of all transducers used in the experiments is given in Figure 4. The error of the apparatus is 4 % on the average. It has been shown that the stress in the trac-

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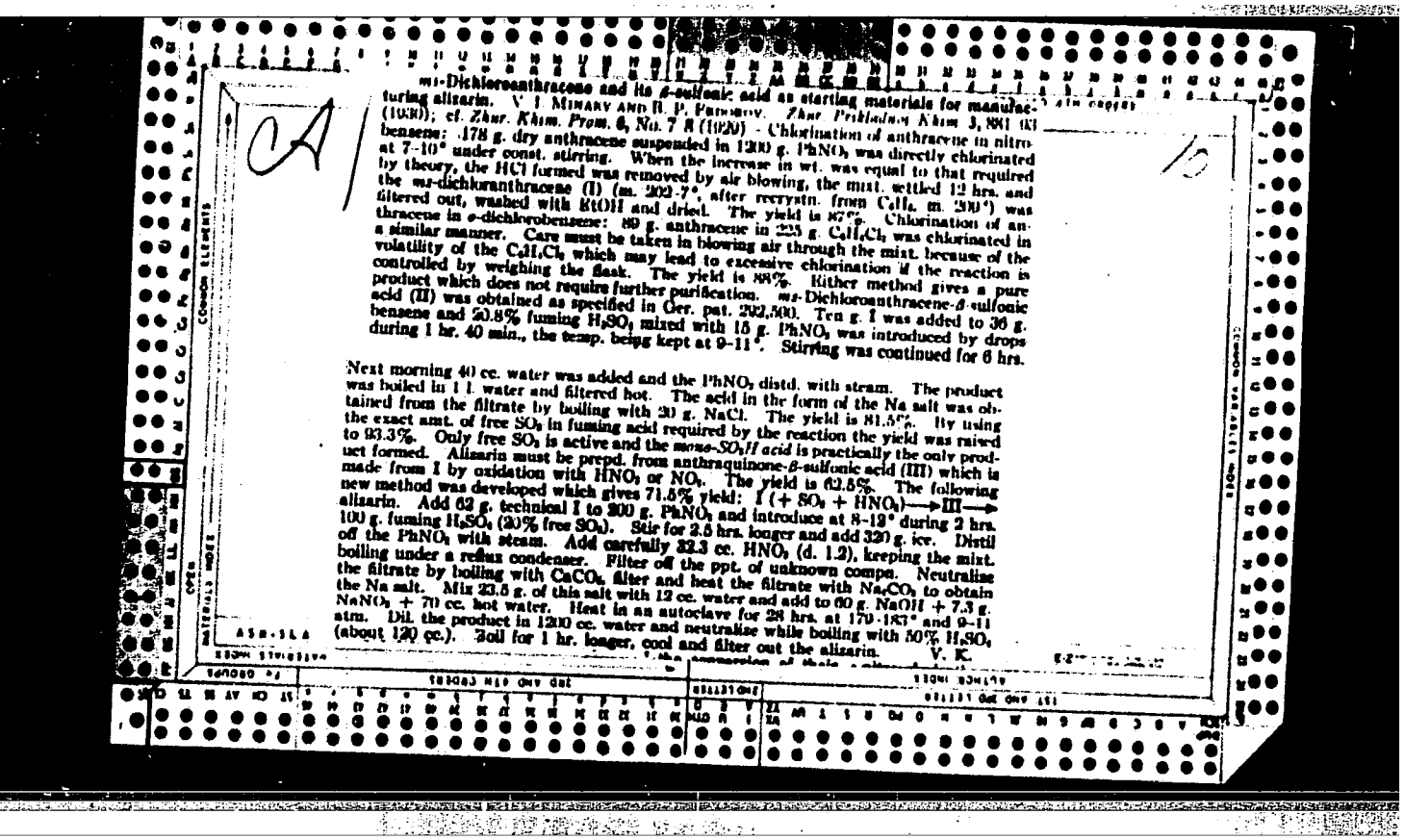
The Interaction of a Truck Tractor and a Trailer During Acceleration Through the Gears

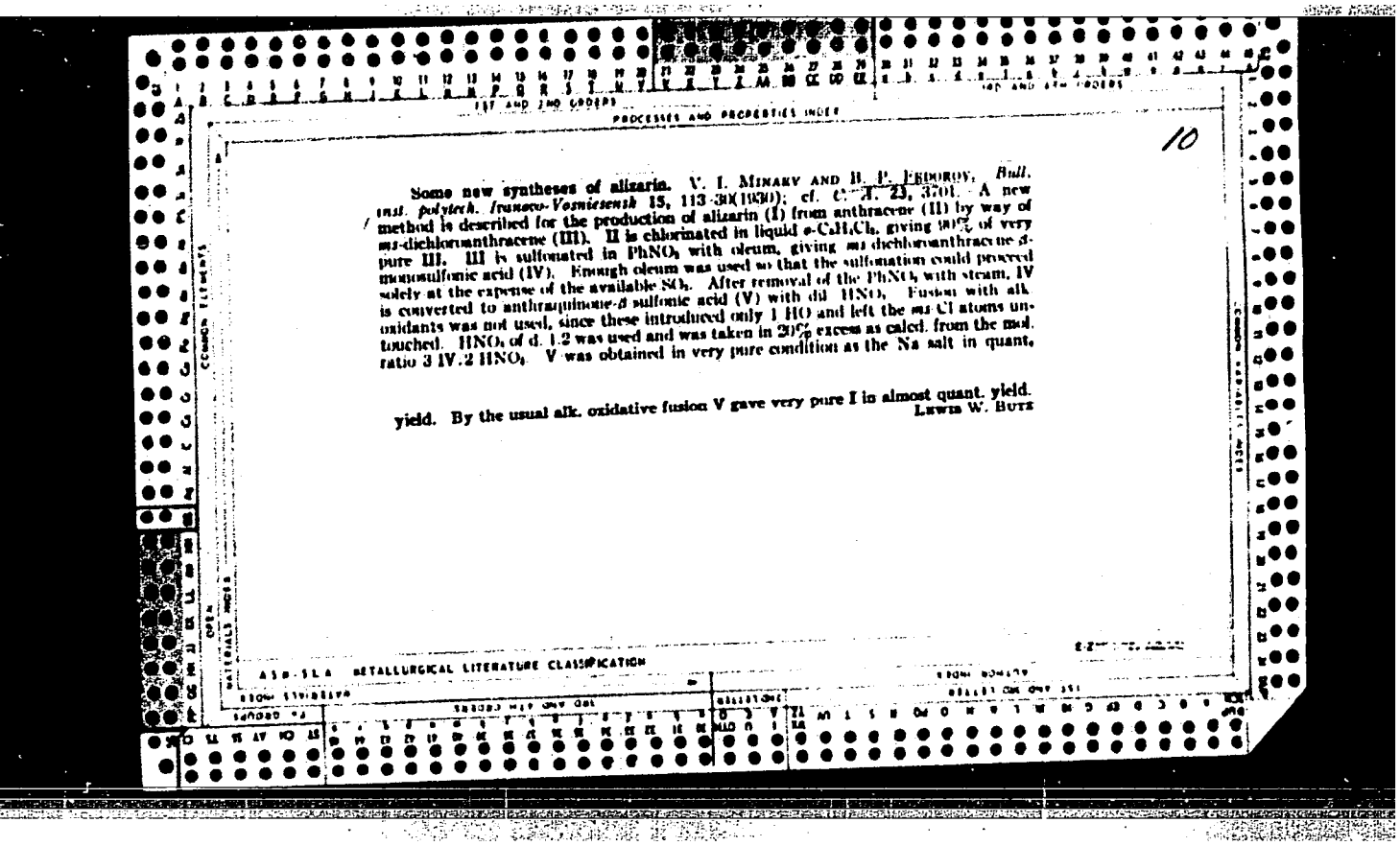
tion and coupling device increases with the mass of the truck and trailers and also with the relation of the trailer mass to the truck tractor mass (Figure 5). The dependence of the stress in the traction and coupling device on the rigidity of the coupling is shown in Figure 6. An increase in friction in the coupling device reduces the stress in the hook (Figure 7). There are 6 graphs and 3 diagrams.

1. Cargo vehicles--Operation 2. Cargo vehicles--Performance
3. Trailers--Performance 4. Transmission gears--Operation



m-Dichloroanthracene and its *β*-sulfonic acid as starting materials for manufacturing alizarin. V. I. Minary and B. P. Fabrichnyi. *Zhur. Prikladnoi Khim.* 3, 881 (1930); cf. *Zhur. Khim. Prom.* 6, No. 7 8 (1929). - Chlorination of anthracene in nitrobenzene: 178 g. dry anthracene suspended in 1200 g. $PhNO_2$ was directly chlorinated at 7–10° under const. stirring. When the increase in wt. was equal to that required by theory, the HCl formed was removed by air blowing, the mixt. settled 12 hrs. and the *m*-dichloroanthracene (I) (m. 202–7°, after recrystn. from C_6H_6, m. 208°) was filtered out, washed with EtOH and dried. The yield is 87%. Chlorination of anthracene in *o*-dichlorobenzene: 89 g. anthracene in 225 g. $C_6H_4Cl_2$ was chlorinated in a similar manner. Care must be taken in blowing air through the mixt. because of the volatility of the $C_6H_4Cl_2$ which may lead to excessive chlorination if the reaction is controlled by weighing the flask. The yield is 88%. Either method gives a pure product which does not require further purification. *m*-Dichloroanthracene-*β*-sulfonic acid (II) was obtained as specified in Ger. pat. 202,500. Ten g. I was added to 36 g. benzene and 50.8% fuming H_2SO_4 mixed with 15 g. $PhNO_2$ was introduced by drops during 1 hr. 40 min., the temp. being kept at 9–11°. Stirring was continued for 6 hrs.

Next morning 40 cc. water was added and the $PhNO_2$ distd. with steam. The product was boiled in 1 l. water and filtered hot. The acid in the form of the Na salt was obtained from the filtrate by boiling with 30 g. NaCl. The yield is 81.5%. By using the exact amt. of free SO_3 in fuming acid required by the reaction the yield was raised to 93.3%. Only free SO_3 is active and the *mono-SO_3H acid* is practically the only product formed. Alizarin must be prepd. from anthraquinone-*β*-sulfonic acid (III) which is made from I by oxidation with HNO_3 or NO_2. The yield is 62.5%. The following new method was developed which gives 71.5% yield: I (+ SO_3 + HNO_3) ⟶ III ⟶ alizarin. Add 62 g. technical I to 200 g. $PhNO_2$ and introduce at 8–12° during 2 hrs. 100 g. fuming H_2SO_4 (20% free SO_3). Stir for 2.5 hrs. longer and add 320 g. ice. Distil off the $PhNO_2$ with steam. Add carefully 32.3 cc. HNO_3 (d. 1.2), keeping the mixt. boiling under a reflux condenser. Filter off the ppt. of unknown compn. Neutralize the filtrate by boiling with $CaCO_3$, filter and heat the filtrate with Na_2CO_3 to obtain the Na salt. Mix 23.5 g. of this salt with 12 cc. water and add to 60 g. NaOH + 7.3 g. $NaNO_3$ + 70 cc. hot water. Heat in an autoclave for 28 hrs. at 170–183° and 9–11 atm. Dil. the product in 1200 cc. water and neutralize while boiling with 50% H_2SO_4 (about 120 cc.). Boil for 1 hr. longer, cool and filter out the alizarin. V. K.



PROCESSES AND PROPERTIES INDEX

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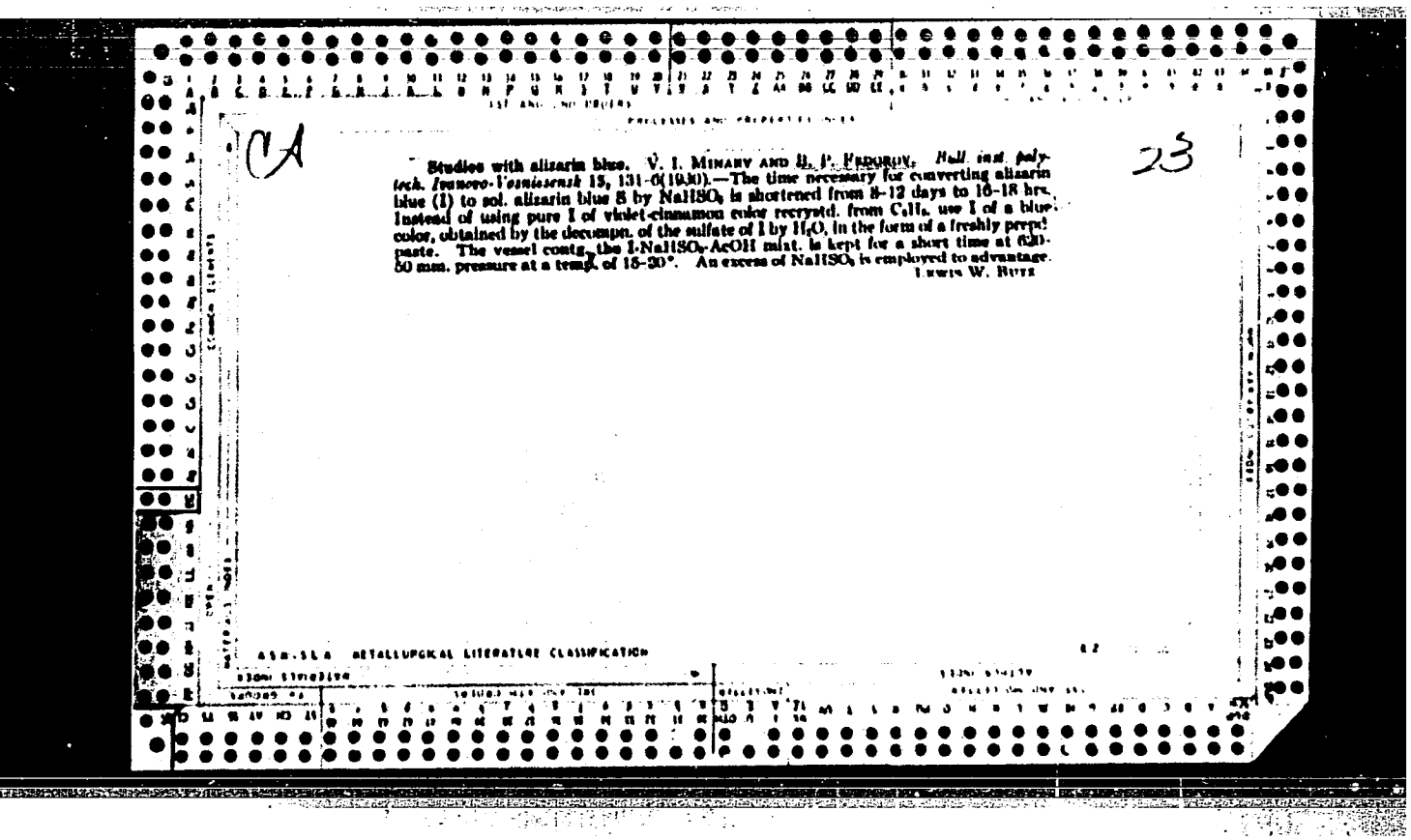
Some new syntheses of alizarin. V. I. Minaev and B. P. Fedorov. *Bull. inst. polytech. Ivanovo-Voznesensk* 15, 113-30(1930); cf. *C. A.* 23, 3701. A new method is described for the production of alizarin (I) from anthracene (II) by way of *ms*-dichloroanthracene (III). II is chlorinated in liquid *o*-$C_6H_4Cl_2$ giving 80% of very pure III. III is sulfonated in $PhNO_2$ with oleum, giving *ms* dichloroanthracene *β*-monosulfonic acid (IV). Enough oleum was used so that the sulfonation could proceed solely at the expense of the available SO_3. After removal of the $PhNO_2$ with steam, IV is converted to anthraquinone-*β* sulfonic acid (V) with dil HNO_3. Fusion with alk. oxidants was not used, since these introduced only 1 HO and left the *ms* Cl atoms untouched. HNO_3 of d. 1.2 was used and was taken in 20% excess as calcd. from the mol. ratio 3 IV:2 HNO_3. V was obtained in very pure condition as the Na salt in quant. yield. By the usual alk. oxidative fusion V gave very pure I in almost quant. yield.

Lewis W. Butz

A 5 8 - 5 L A METALLURGICAL LITERATURE CLASSIFICATION

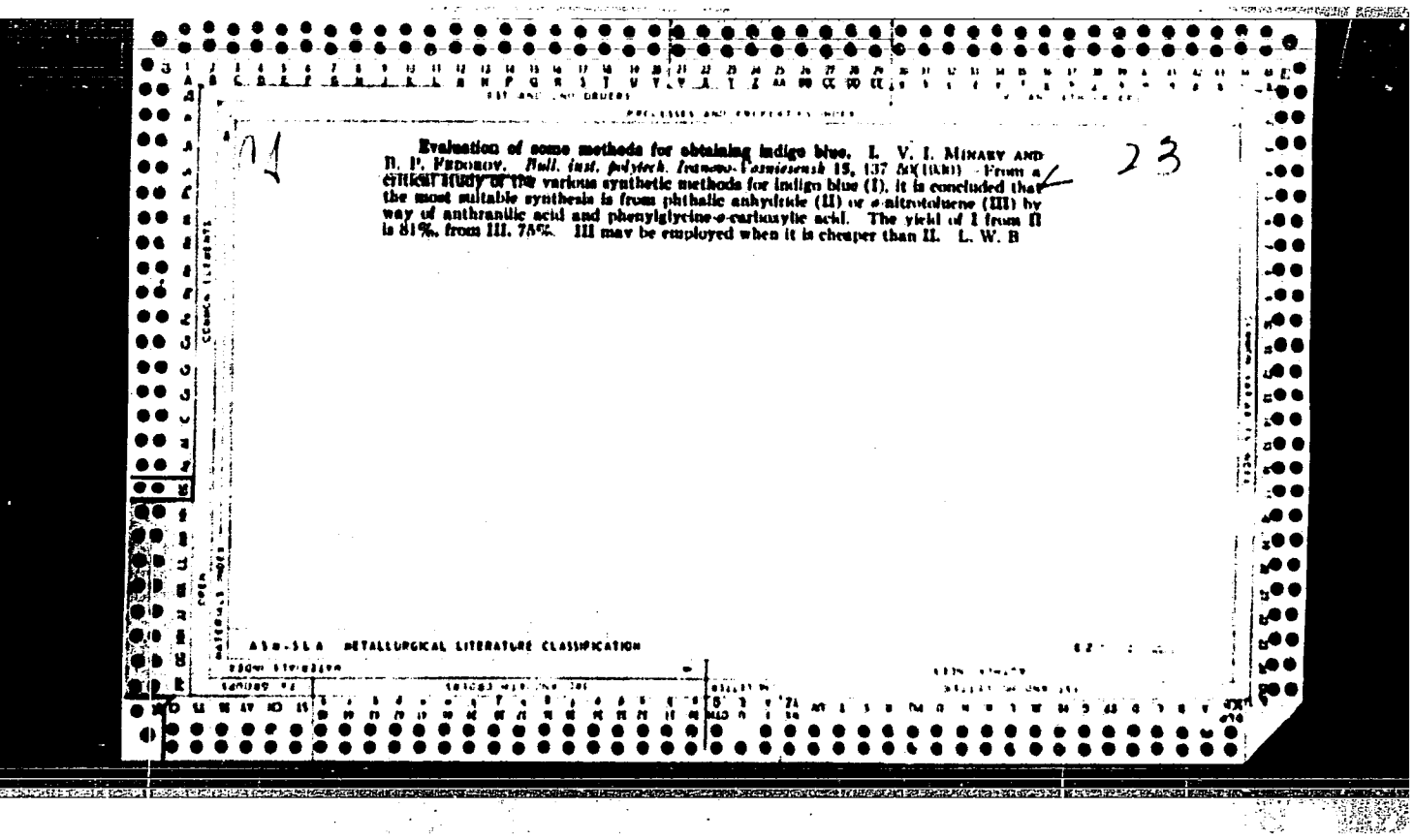


CA 23

Studies with alizarin blue. V. I. Minaev and B. P. Fedorov. *Nauk. issl. polytekh. Ivanovo-Voznesensk* 15, 131-6(1930).—The time necessary for converting alizarin blue (I) to sol. alizarin blue S by $NaHSO_3$ is shortened from 8–12 days to 16–18 hrs. Instead of using pure I of violet-cinnamon color recrystd. from C_6H_6, use I of a blue color, obtained by the decompn. of the sulfate of I by H_2O, in the form of a freshly prepd paste. The vessel contg. the I-$NaHSO_3$-AcOH mixt. is kept for a short time at 620–50 mm. pressure at a temp. of 15–20°. An excess of $NaHSO_3$ is employed to advantage.

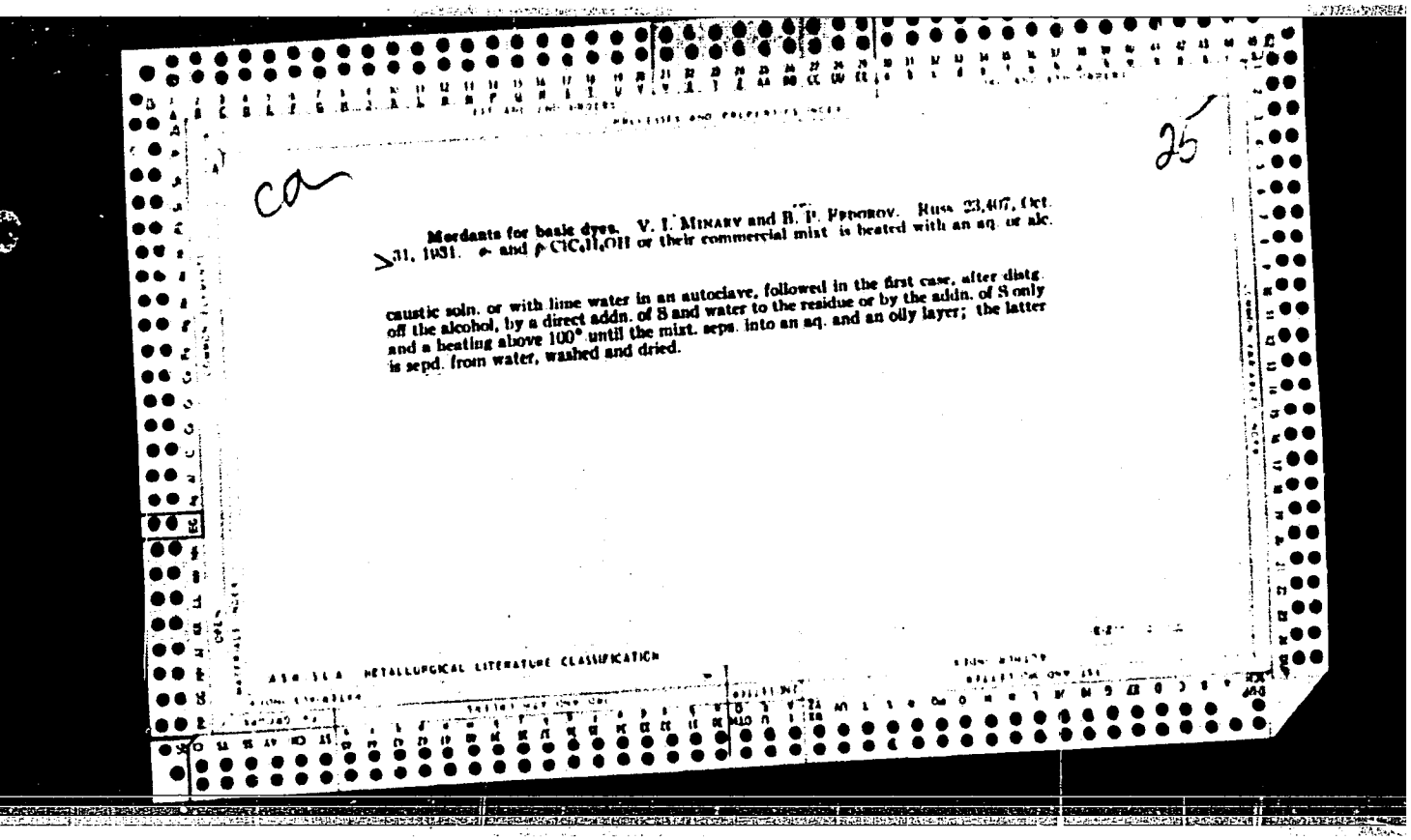
Lewis W. Butz

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Evaluation of some methods for obtaining indigo blue. L. V. I. Minaev and B. P. Fedorov. *Bull. inst. polytech. Ivanovo-Voznesensk* 15, 137 (1951). From a critical study of the various synthetic methods for indigo blue (I), it is concluded that the most suitable synthesis is from phthalic anhydride (II) or *o*-nitrotoluene (III) by way of anthranilic acid and phenylglycine-*o*-carboxylic acid. The yield of I from II is 81%, from III, 75%. III may be employed when it is cheaper than II. L. W. B

A58-51A METALLURGICAL LITERATURE CLASSIFICATION



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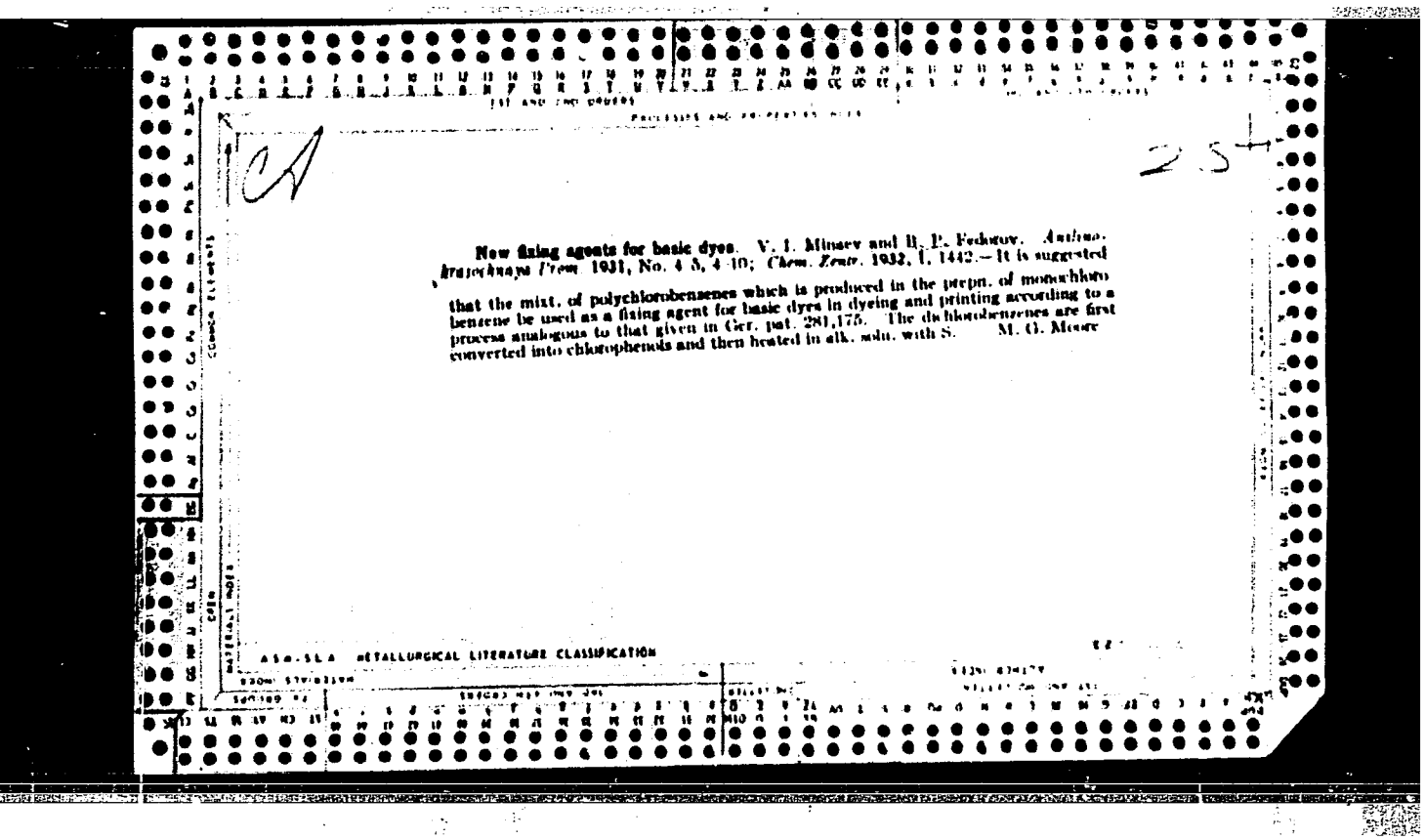
Ca

Mordants for basic dyes. V. I. Minaev and B. P. Fedorov. Russ 23,407, Oct. 31, 1931. α- and β-ClC_6H_4OH or their commercial mixt. is heated with an aq. or alc. caustic soln. or with lime water in an autoclave, followed in the first case, after distg. off the alcohol, by a direct addn. of S and water to the residue or by the addn. of S only and a heating above 100° until the mixt. seps. into an aq. and an oily layer; the latter is sepd. from water, washed and dried.

A14 V1 A METALLURGICAL LITERATURE CLASSIFICATION

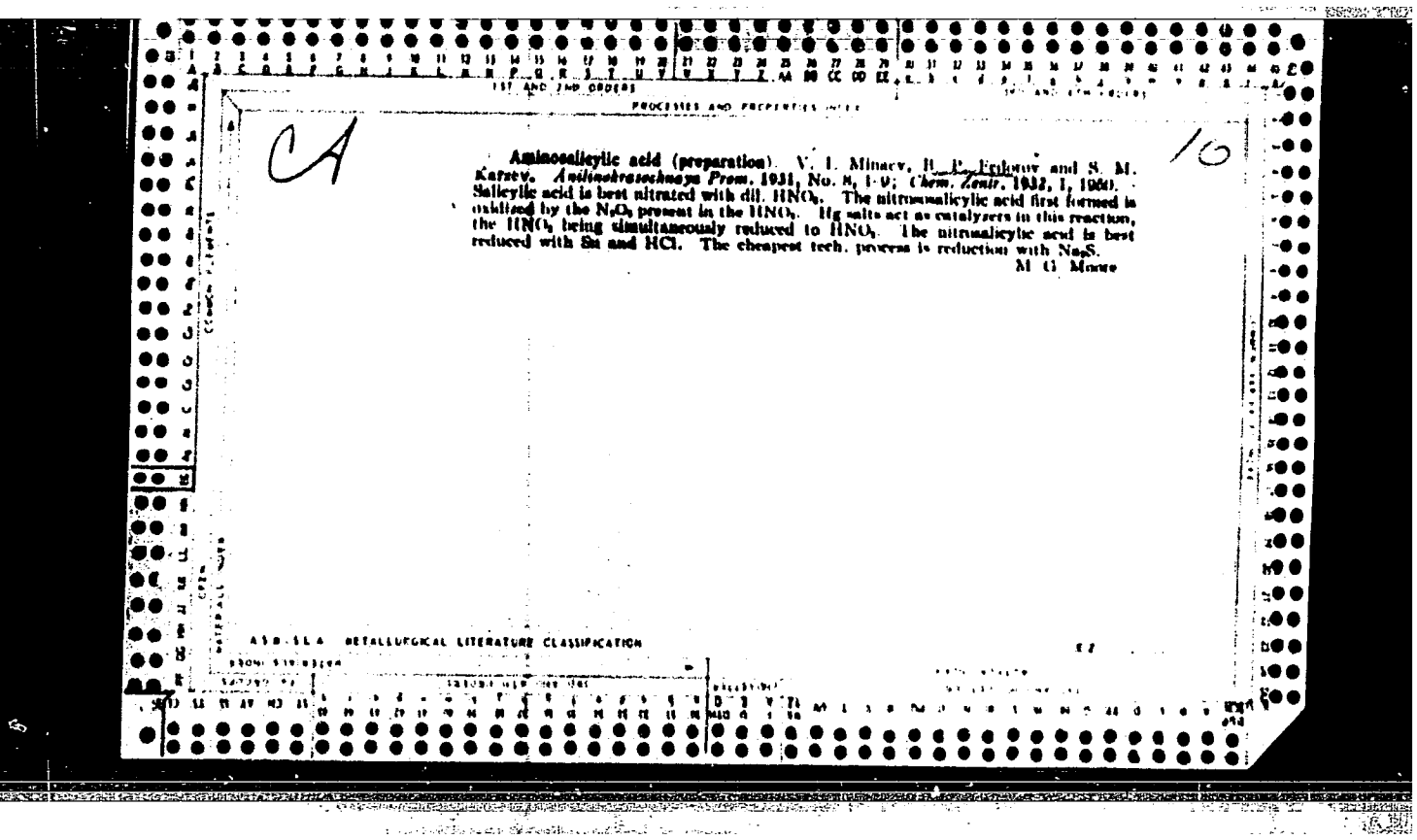


CA

254

New fixing agents for basic dyes. V. I. Minaev and B. P. Fedorov. *Anilino-Krasochnaya Prom.* 1931, No. 4-5, 4-10; *Chem. Zentr.* 1932, I, 1442.—It is suggested that the mixt. of polychlorobenzenes which is produced in the prepn. of monochloro-benzene be used as a fixing agent for basic dyes in dyeing and printing according to a process analogous to that given in Ger. pat. 281,175. The dichlorobenzenes are first converted into chlorophenols and then heated in alk. soln. with S. M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



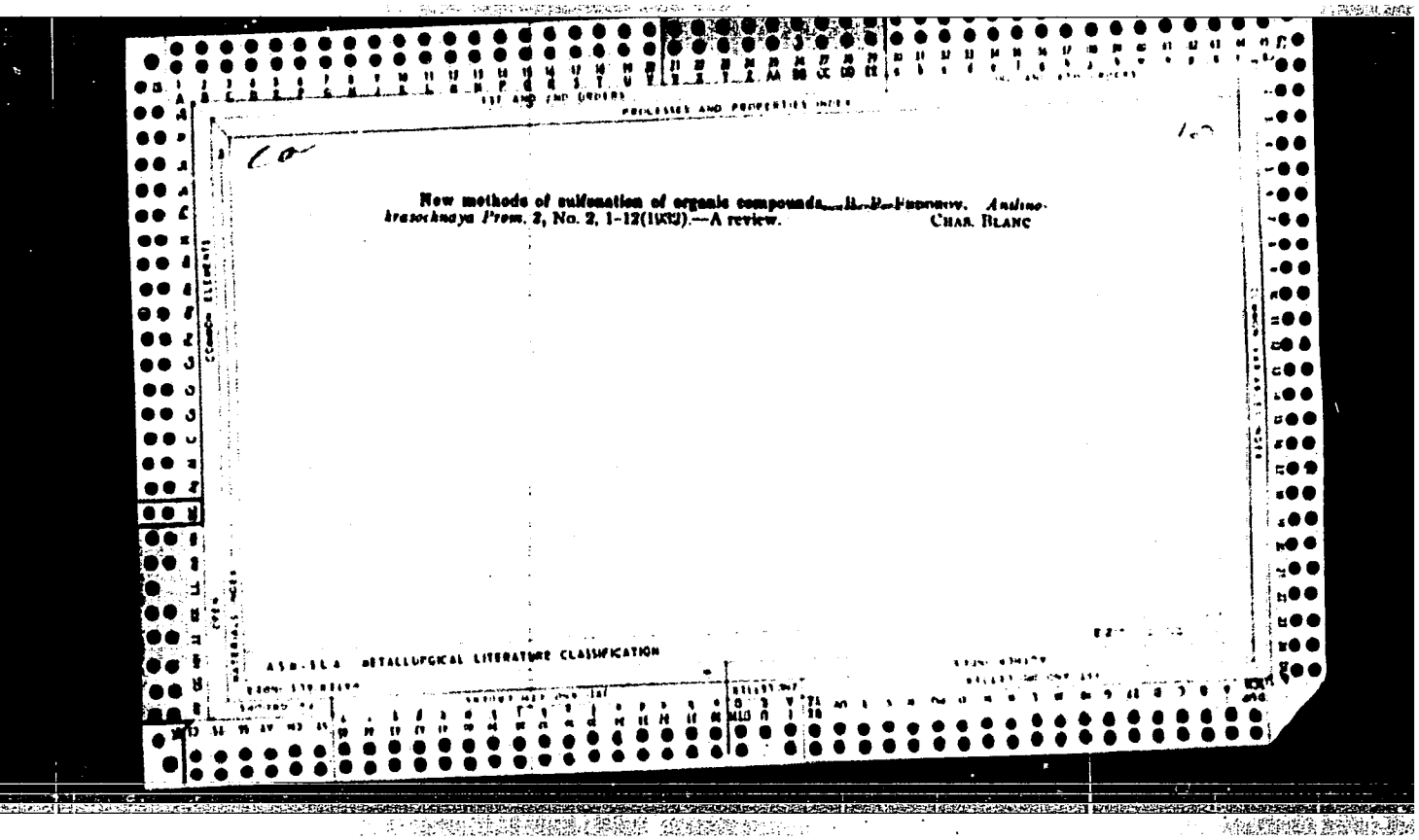
CA

10

Aminosalicylic acid (preparation). V. I. Minaev, B. P. Fabrichnov and S. M. Katzev. *Anilinokrasochnaya Prom.* 1931, No. 8, 1-9; *Chem. Zentr.* 1932, I, 1961. Salicylic acid is best nitrated with dil. HNO_3. The nitrosalicylic acid first formed is oxidized by the N_2O_3 present in the HNO_3. Hg salts act as catalyzers in this reaction, the HNO_3 being simultaneously reduced to HNO_2. The nitrosalicylic acid is best reduced with Sn and HCl. The cheapest tech. process is reduction with Na_2S.

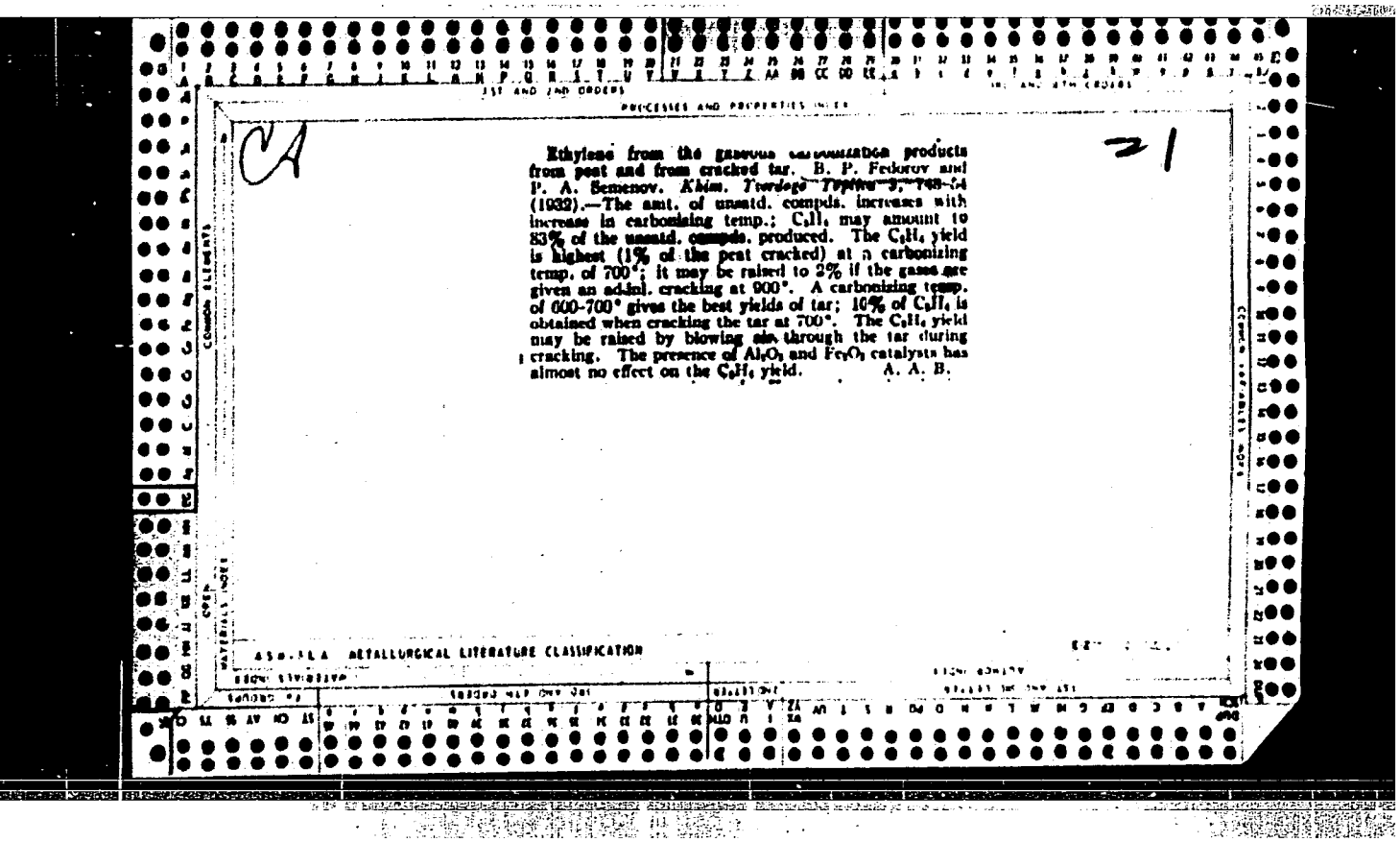
M. G. Moore

A.S.M. METALLURGICAL LITERATURE CLASSIFICATION



New methods of sulfonation of organic compounds. [illegible] Anilino-krasochnaya Prom. 2, No. 2, 1-12(1932).—A review. CHAS. BLANC

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

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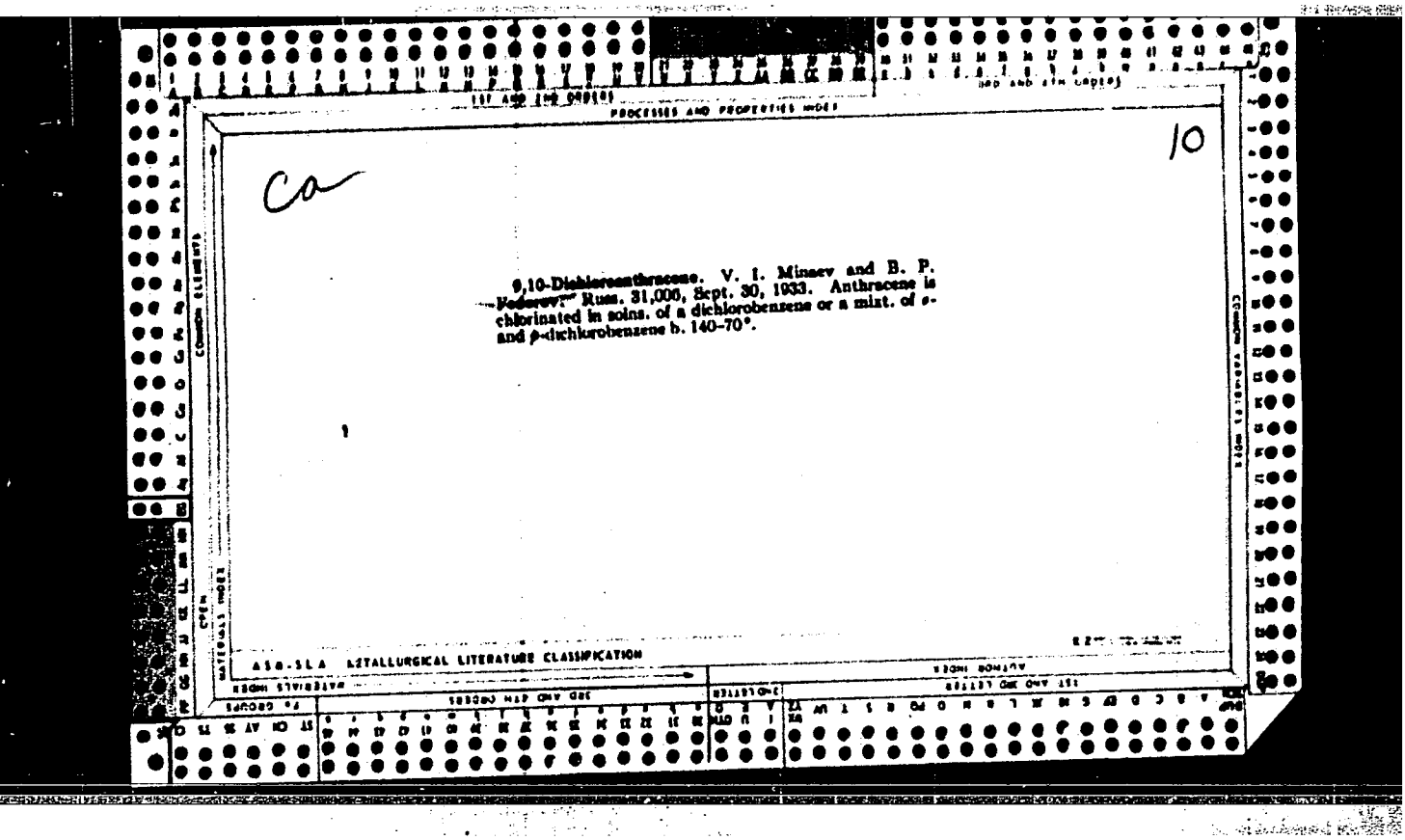
Ethylene from the gaseous carbonization products from peat and from cracked tar. B. P. Fedorov and P. A. Semenov. *Khim. Tverdogo Topliva* 3, 745-54 (1932).—The amt. of unsatd. compds. increases with increase in carbonizing temp.; C_2H_4 may amount to 83% of the unsatd. compds. produced. The C_2H_4 yield is highest (1% of the peat cracked) at a carbonizing temp. of 700°; it may be raised to 2% if the gases are given an addnl. cracking at 900°. A carbonizing temp. of 600-700° gives the best yields of tar; 10% of C_2H_4 is obtained when cracking the tar at 700°. The C_2H_4 yield may be raised by blowing air through the tar during cracking. The presence of Al_2O_3 and Fe_2O_3 catalysts has almost no effect on the C_2H_4 yield. A. A. B.

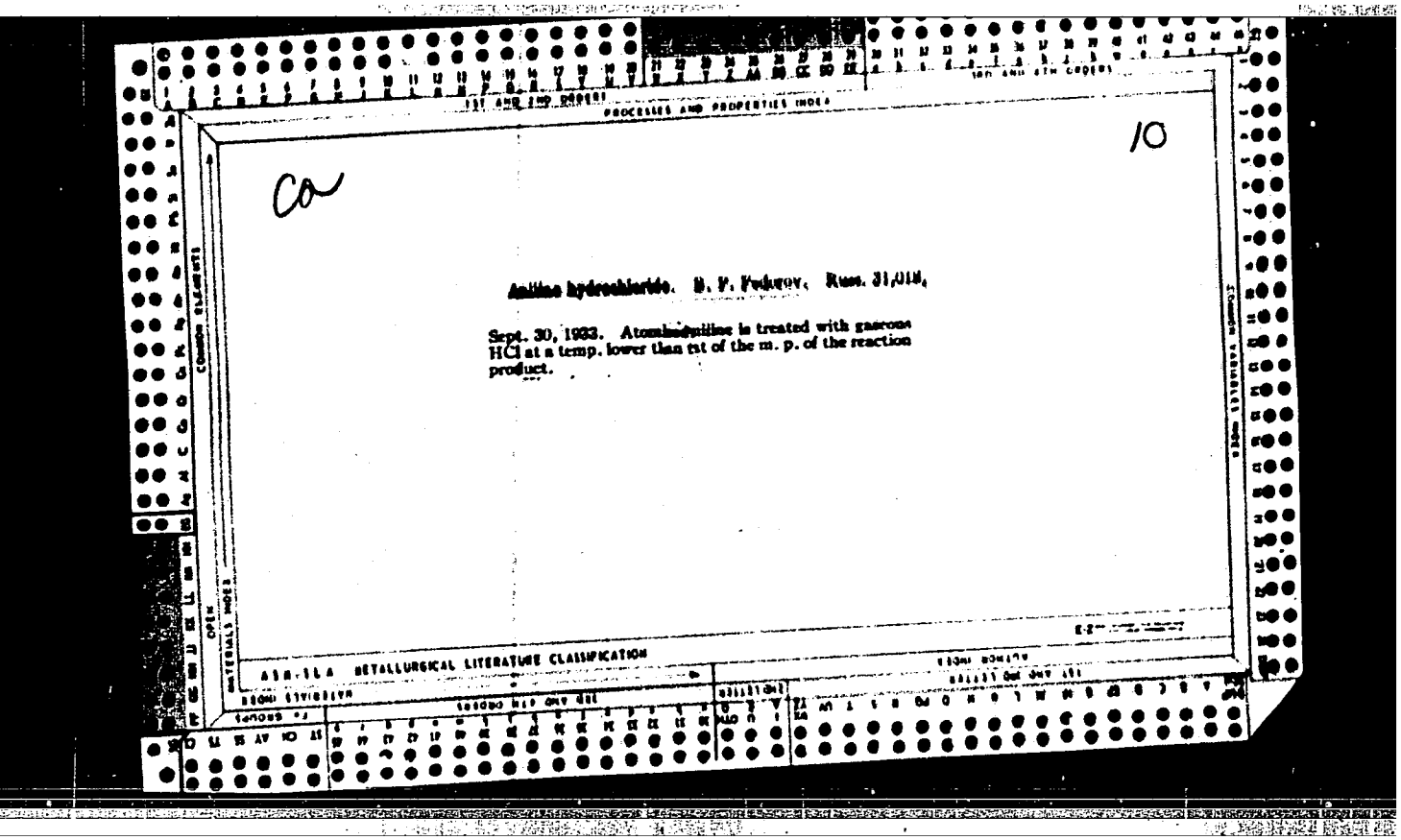


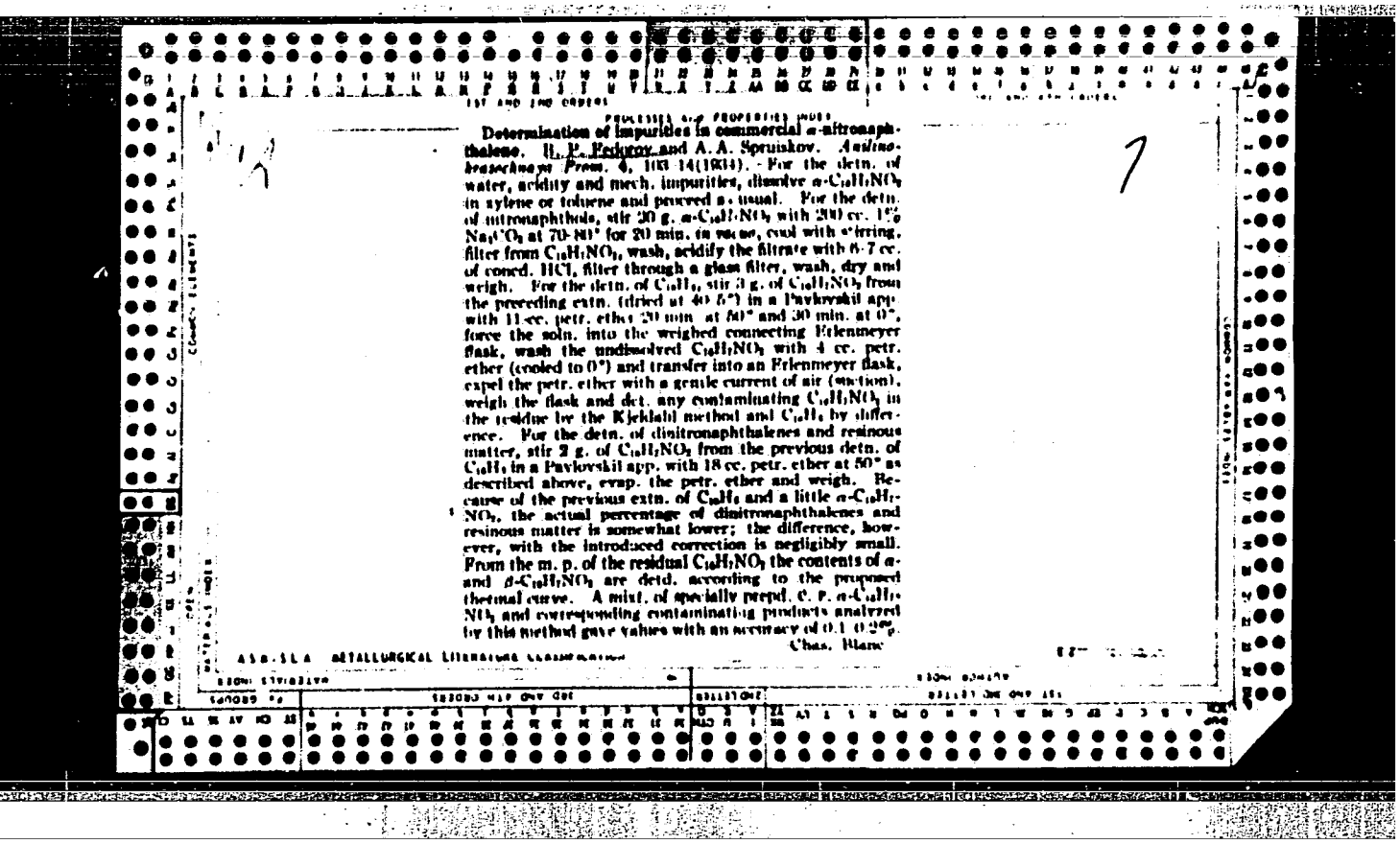
10

Ca

9,10-Dichloroanthracene. V. I. Minaev and B. P. Fedorov. Russ. 31,000, Sept. 30, 1933. Anthracene is chlorinated in soins. of a dichlorobenzene or a mixt. of *o*- and *p*-dichlorobenzene b. 140–70°.

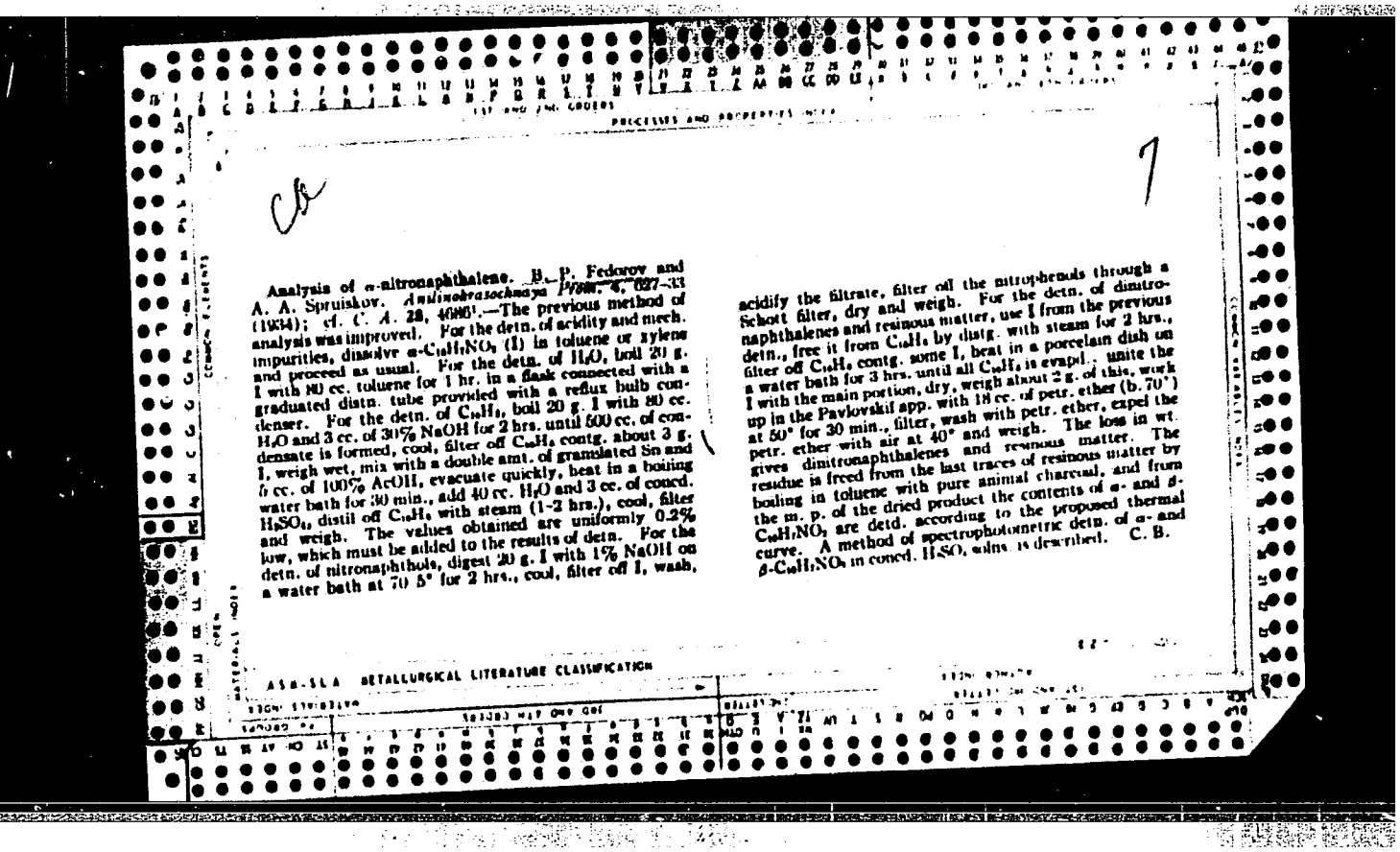
A58-3L A METALLURGICAL LITERATURE CLASSIFICATION



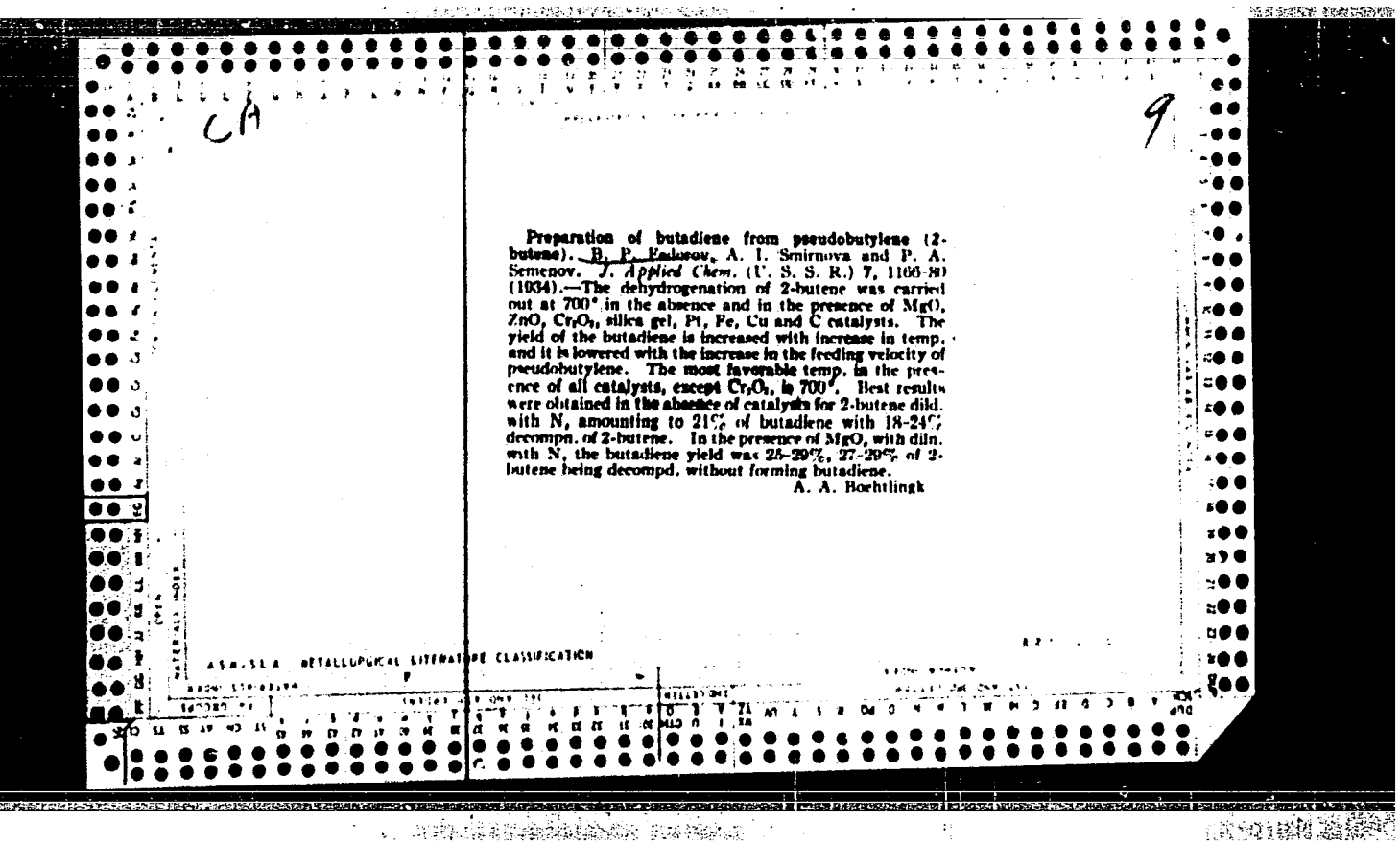


Determination of impurities in commercial α-nitronaphthalene. B. P. Fedorov and A. A. Spruiskov. *Analiticheskaya Prom.* 6, 103-14(1934). - For the detn. of water, acidity and mech. impurities, dissolve α-$C_{10}H_7NO_2$ in xylene or toluene and proceed as usual. For the detn. of nitronaphthols, stir 20 g. α-$C_{10}H_7NO_2$ with 200 cc. 1% Na_2CO_3 at 70-80° for 20 min. in vacuo, cool with stirring, filter from $C_{10}H_7NO_2$, wash, acidify the filtrate with 6-7 cc. of concd. HCl, filter through a glass filter, wash, dry and weigh. For the detn. of $C_{10}H_8$, stir 3 g. of $C_{10}H_7NO_2$ from the preceding extn. (dried at 40-5°) in a Pavlovskii app. with 11 cc. petr. ether 20 min. at 40° and 30 min. at 0°, force the soln. into the weighed connecting Erlenmeyer flask, wash the undissolved $C_{10}H_7NO_2$ with 4 cc. petr. ether (cooled to 0°) and transfer into an Erlenmeyer flask, expel the petr. ether with a gentle current of air (suction), weigh the flask and det. any contaminating $C_{10}H_7NO_2$ in the residue by the Kjeldahl method and $C_{10}H_8$ by difference. For the detn. of dinitronaphthalenes and resinous matter, stir 2 g. of $C_{10}H_7NO_2$ from the previous detn. of $C_{10}H_8$ in a Pavlovskii app. with 18 cc. petr. ether at 50° as described above, evap. the petr. ether and weigh. Because of the previous extn. of $C_{10}H_8$ and a little α-$C_{10}H_7NO_2$, the actual percentage of dinitronaphthalenes and resinous matter is somewhat lower; the difference, however, with the introduced correction is negligibly small. From the m. p. of the residual $C_{10}H_7NO_2$ the contents of α- and β-$C_{10}H_7NO_2$ are detd. according to the proposed thermal curve. A mixt. of specially prepd. C. P. α-$C_{10}H_7NO_2$ and corresponding contaminating products analyzed by this method gave values with an accuracy of 0.1-0.2%.

Chas. Blanc



Analysis of α-nitronaphthalene. B. P. Fedorov and A. A. Spruishov. *Anilinokrasochnaya Prom.* 4, 627–33 (1934); cf. *C. A.* 28, 4086⁹.—The previous method of analysis was improved. For the detn. of acidity and mech. impurities, dissolve α-$C_{10}H_7NO_2$ (I) in toluene or xylene and proceed as usual. For the detn. of H_2O, boil 20 g. I with 80 cc. toluene for 1 hr. in a flask connected with a graduated distn. tube provided with a reflux bulb condenser. For the detn. of $C_{10}H_8$, boil 20 g. I with 80 cc. H_2O and 3 cc. of 30% NaOH for 2 hrs. until 500 cc. of condensate is formed, cool, filter off $C_{10}H_8$ contg. about 3 g. I, weigh wet, mix with a double amt. of granulated Sn and 6 cc. of 100% AcOH, evacuate quickly, heat in a boiling water bath for 30 min., add 40 cc. H_2O and 3 cc. of concd. H_2SO_4, distil off $C_{10}H_8$ with steam (1–2 hrs.), cool, filter and weigh. The values obtained are uniformly 0.2% low, which must be added to the results of detn. For the detn. of nitronaphthols, digest 20 g. I with 1% NaOH on a water bath at 70–5° for 2 hrs., cool, filter off I, wash, acidify the filtrate, filter off the nitrophenols through a Schott filter, dry and weigh. For the detn. of dinitronaphthalenes and resinous matter, use I from the previous detn., free it from $C_{10}H_8$ by distg. with steam for 2 hrs., filter off $C_{10}H_8$ contg. some I, heat in a porcelain dish on a water bath for 3 hrs. until all $C_{10}H_8$ is evapd., unite the I with the main portion, dry, weigh about 2 g. of this, work up in the Pavlovskii app. with 18 cc. of petr. ether (b. 70°) at 50° for 30 min., filter, wash with petr. ether, expel the petr. ether with air at 40° and weigh. The loss in wt. gives dinitronaphthalenes and resinous matter. The residue is freed from the last traces of resinous matter by boiling in toluene with pure animal charcoal, and from the m. p. of the dried product the contents of α- and β-$C_{10}H_7NO_2$ are detd. according to the proposed thermal curve. A method of spectrophotometric detn. of α- and β-$C_{10}H_7NO_2$ in concd. H_2SO_4 solns. is described. C. B.



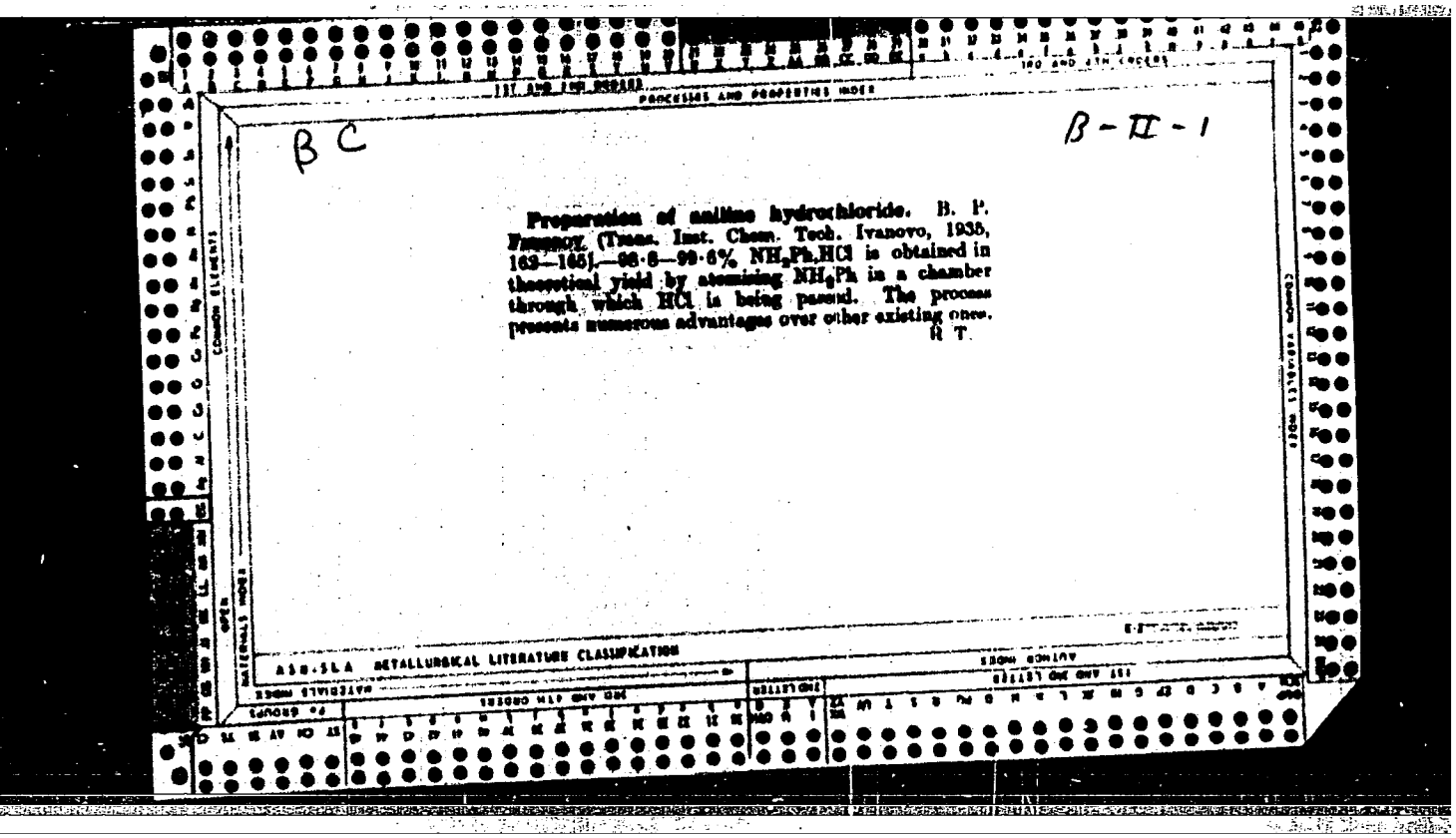
CA

9

Preparation of butadiene from pseudobutylene (2-butene). B. P. Enikeev, A. I. Smirnova and P. A. Semenov. *J. Applied Chem.* (U. S. S. R.) 7, 1166-80 (1934).—The dehydrogenation of 2-butene was carried out at 700° in the absence and in the presence of MgO, ZnO, Cr_2O_3, silica gel, Pt, Fe, Cu and C catalysts. The yield of the butadiene is increased with increase in temp. and it is lowered with the increase in the feeding velocity of pseudobutylene. The most favorable temp. in the presence of all catalysts, except Cr_2O_3, is 700°. Best results were obtained in the absence of catalysts for 2-butene dild. with N, amounting to 21% of butadiene with 18-24% decompn. of 2-butene. In the presence of MgO, with dilu. with N, the butadiene yield was 25-29%, 27-29% of 2-butene being decompd. without forming butadiene.

A. A. Berhtlingk

ASM/SLA METALLURGICAL LITERATURE CLASSIFICATION



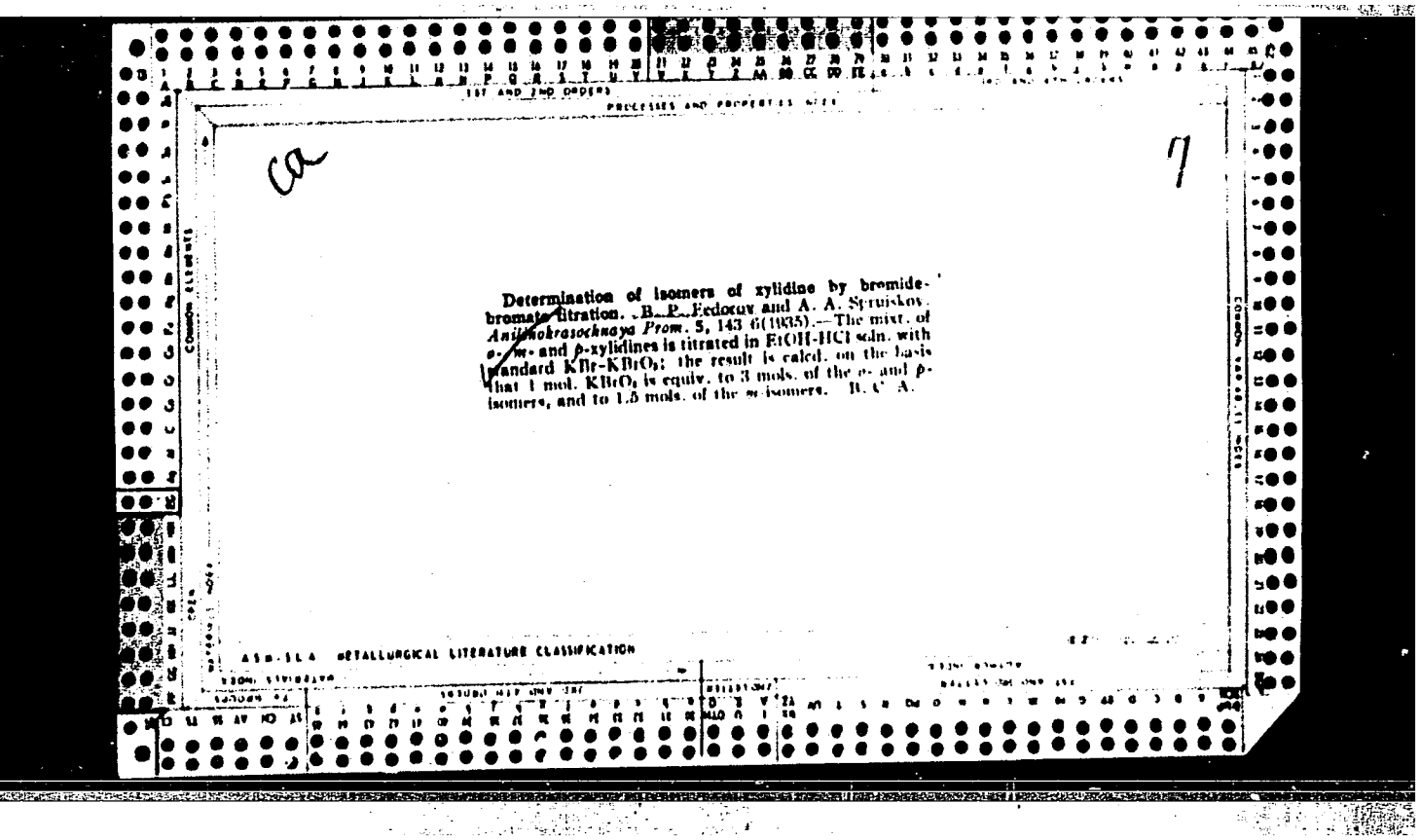
BC

B-II-1

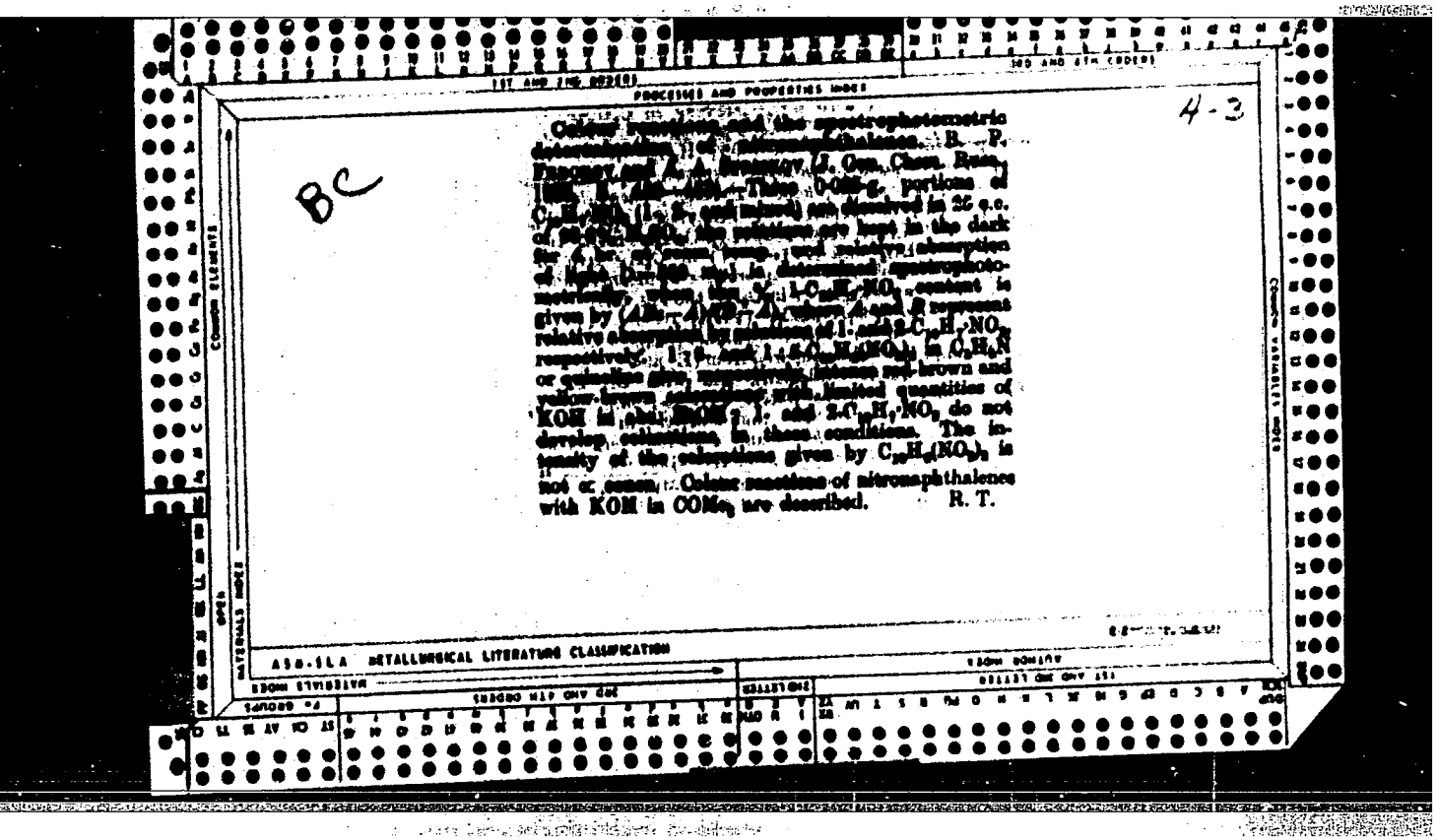
Preparation of aniline hydrochloride. B. P. Fenigsov. (Trans. Inst. Chem. Tech. Ivanovo, 1938, 163—165).—98·8—99·6% $NH_2Ph.HCl$ is obtained in theoretical yield by atomising NH_2Ph in a chamber through which HCl is being passed. The process presents numerous advantages over other existing ones.

R. T.

A38-51A METALLURGICAL LITERATURE CLASSIFICATION



Determination of isomers of xylidine by bromide-bromate titration. B. P. Fedorov and A. A. Spruiskov. *Anilinokrasochnaya Prom.* 5, 143–6(1935).—The mixt. of *o*-, *m*- and *p*-xylidines is titrated in EtOH-HCl soln. with standard KBr-$KBrO_3$; the result is calcd. on the basis that 1 mol. $KBrO_3$ is equiv. to 3 mols. of the *o*- and *p*-isomers, and to 1.5 mols. of the *m*-isomers. B. C. A.

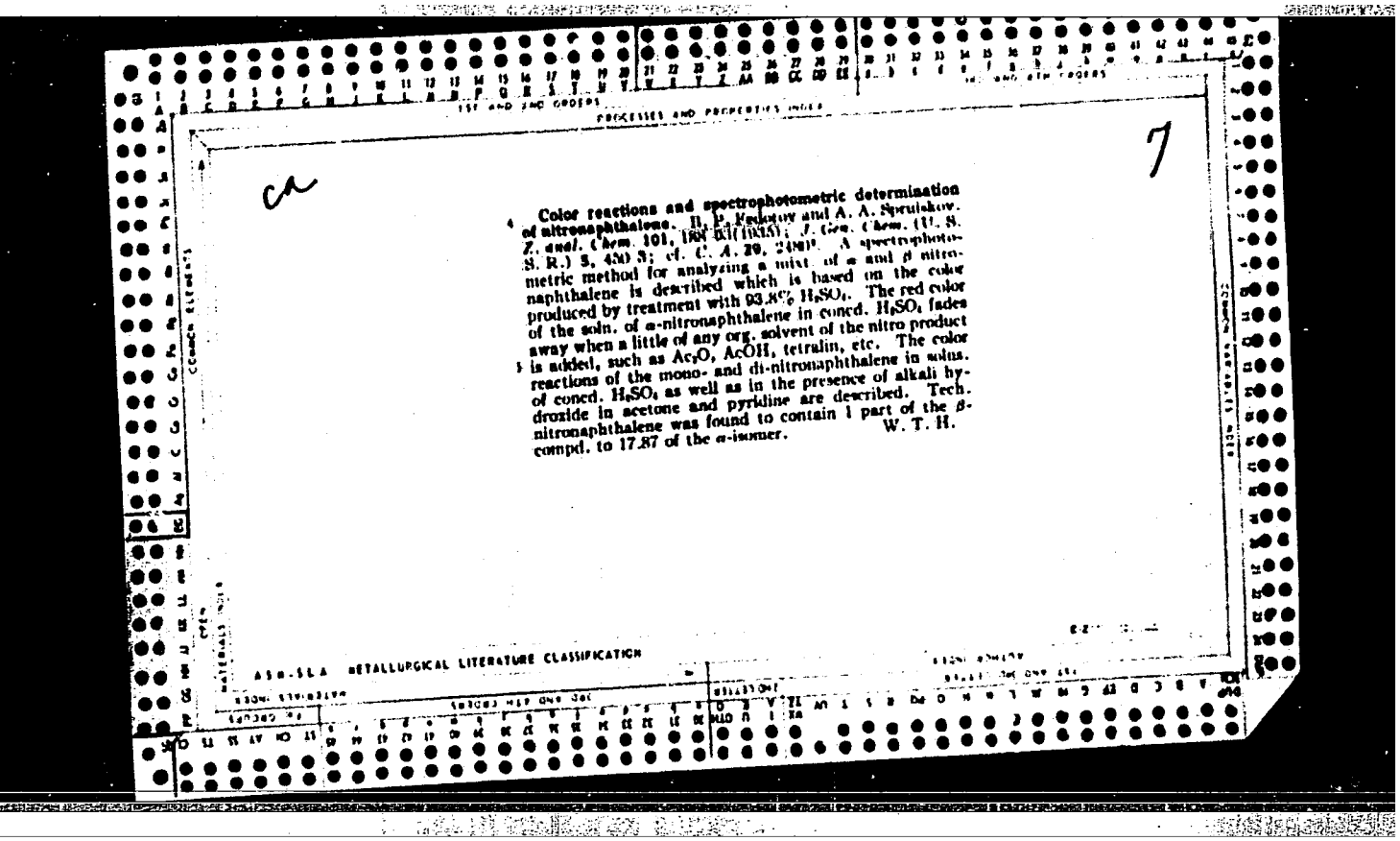


BC

4-3

Colour reactions and the spectrophotometric determination of nitronaphthalenes. B. P. Fabrichnyi and Z. A. Iovenko. J. Gen. Chem. Russ. [illegible]. Three 0.025-g. portions of $C_{10}H_7NO_2$ (I), $C_{10}H_6(NO_2)_2$ (II), and mixed) are dissolved in 25 c.c. of 95% C_2H_5OH, the solutions are kept in the dark for 2 hrs. at room temp., and relative absorption of light (in mμ) is determined spectrophotometrically; when the % I in $C_{10}H_7NO_2$ content is given by $(A_{mix} - A_{II})/(A_I - A_{II})$ where A_{mix}, A_I, and A_{II} represent relative absorption by mixture of I and II in C_2H_5N respectively. I, II, and $1,4-C_{10}H_6(NO_2)_2$ in C_2H_5N or quinoline give, respectively, intense red-brown and yellow-brown colorations with limited quantities of KOH in $CHCl_3$; I and $2,6-C_{10}H_6(NO_2)_2$ do not develop colorations in these conditions. The intensity of the colorations given by $C_{10}H_6(NO_2)_2$ is not of comm. Colour reactions of nitronaphthalenes with KOH in $COMe_2$ are described. R. T.

A58-51A METALLURGICAL LITERATURE CLASSIFICATION

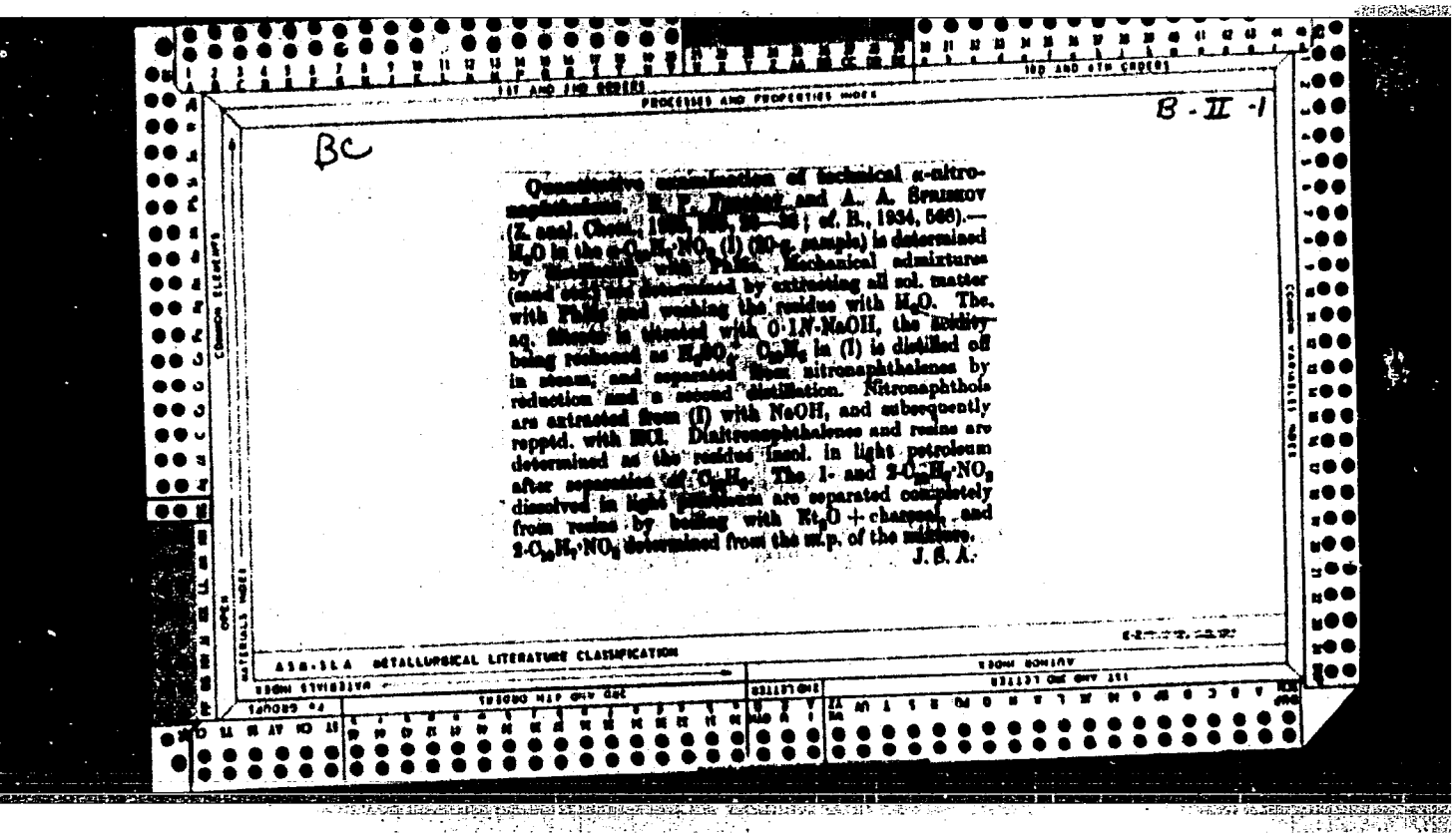


ca

7

Color reactions and spectrophotometric determination of nitronaphthalene. B. P. Fedotov and A. A. Sprujskow. *Z. anal. Chem.* 101, 188 (1935); *J. Gen. Chem. (U. S. S. R.)* 5, 450 S; cf. *C. A.* 29, 2481⁹. A spectrophotometric method for analyzing a mixt. of α and β nitronaphthalene is described which is based on the color produced by treatment with 93.8% H_2SO_4. The red color of the soln. of α-nitronaphthalene in concd. H_2SO_4 fades away when a little of any org. solvent of the nitro product is added, such as Ac_2O, AcOH, tetralin, etc. The color reactions of the mono- and di-nitronaphthalene in solns. of concd. H_2SO_4 as well as in the presence of alkali hydroxide in acetone and pyridine are described. Tech. nitronaphthalene was found to contain 1 part of the β-compd. to 17.87 of the α-isomer. W. T. H.

A 50-SLA METALLURGICAL LITERATURE CLASSIFICATION



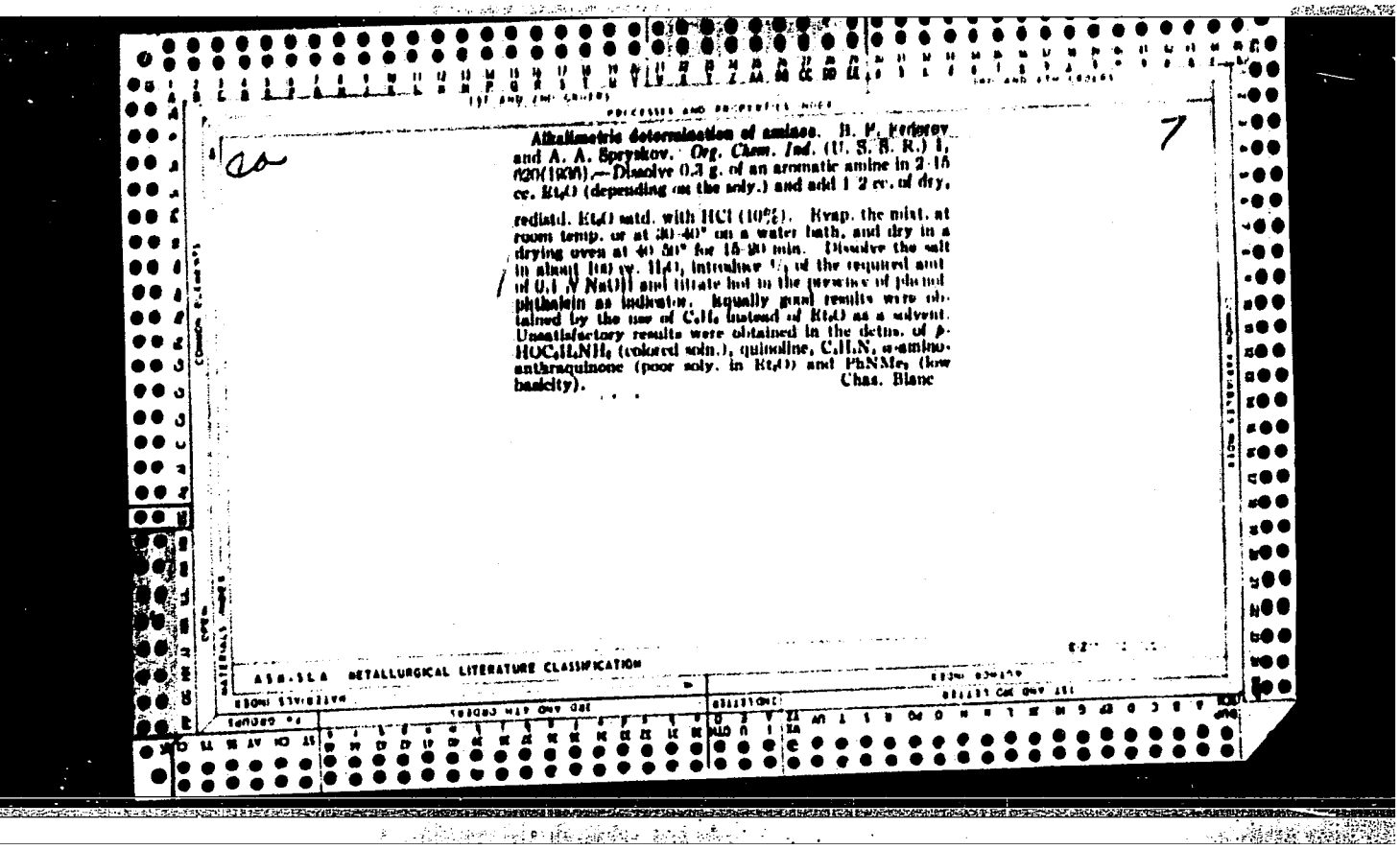
B-II-1

BC

Quantitative examination of technical α-nitronaphthalene. [illegible] and A. A. Brainov (Z. anal. Chem., [illegible]; cf. B., 1934, 566).—H_2O in the α-$C_{10}H_7 \cdot NO_2$ (I) (20-g. sample) is determined by distillation with PhMe. Mechanical admixtures (sand etc.) are determined by extracting all sol. matter with PhMe and washing the residue with H_2O. The aq. filtrate is titrated with 0·1*N*-NaOH, the acidity being reckoned as H_2SO_4. $C_{10}H_8$ in (I) is distilled off in steam, and separated from nitronaphthalenes by reduction and a second distillation. Nitronaphthols are extracted from (I) with NaOH, and subsequently reppt'd. with HCl. Dinitronaphthalenes and resins are determined as the residue insol. in light petroleum after separation of $C_{10}H_8$. The 1- and 2-$C_{10}H_7 \cdot NO_2$ dissolved in light petroleum are separated completely from resins by boiling with Et_2O + charcoal, and 2-$C_{10}H_7 \cdot NO_2$ determined from the m.p. of the mixture.

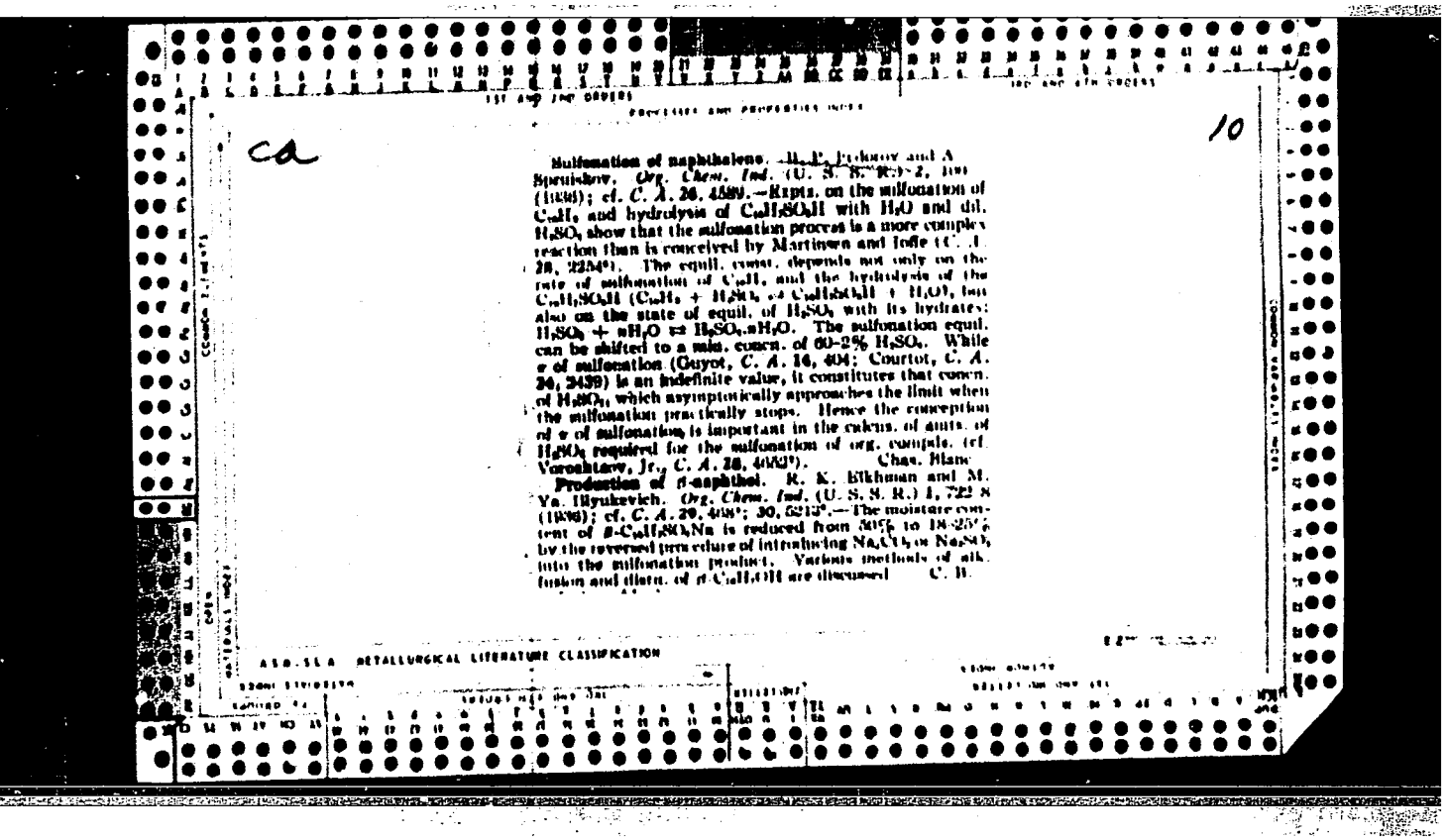
J. S. A.

A58-61A METALLURGICAL LITERATURE CLASSIFICATION



Alkalimetric determination of amines. B. P. Fedorov and A. A. Spryskov. *Org. Chem. Ind.* (U. S. S. R.) 1, 620(1936).—Dissolve 0.3 g. of an aromatic amine in 2-15 cc. Et_2O (depending on the soly.) and add 1-2 cc. of dry, redistd. Et_2O satd. with HCl (10%). Evap. the mixt. at room temp. or at 30-40° on a water bath, and dry in a drying oven at 40-50° for 15-30 min. Dissolve the salt in about 10 cc. H_2O, introduce 1 g. of the required amt. of 0.1 *N* NaOH and titrate hot in the presence of phenolphthalein as indicator. Equally good results were obtained by the use of C_6H_6 instead of Et_2O as a solvent. Unsatisfactory results were obtained in the detns. of *p*-$HOC_6H_4NH_2$ (colored soln.), quinoline, C_9H_7N, α-aminoanthraquinone (poor soly. in Et_2O) and $PhNMe_2$ (low basicity).

Chas. Blanc



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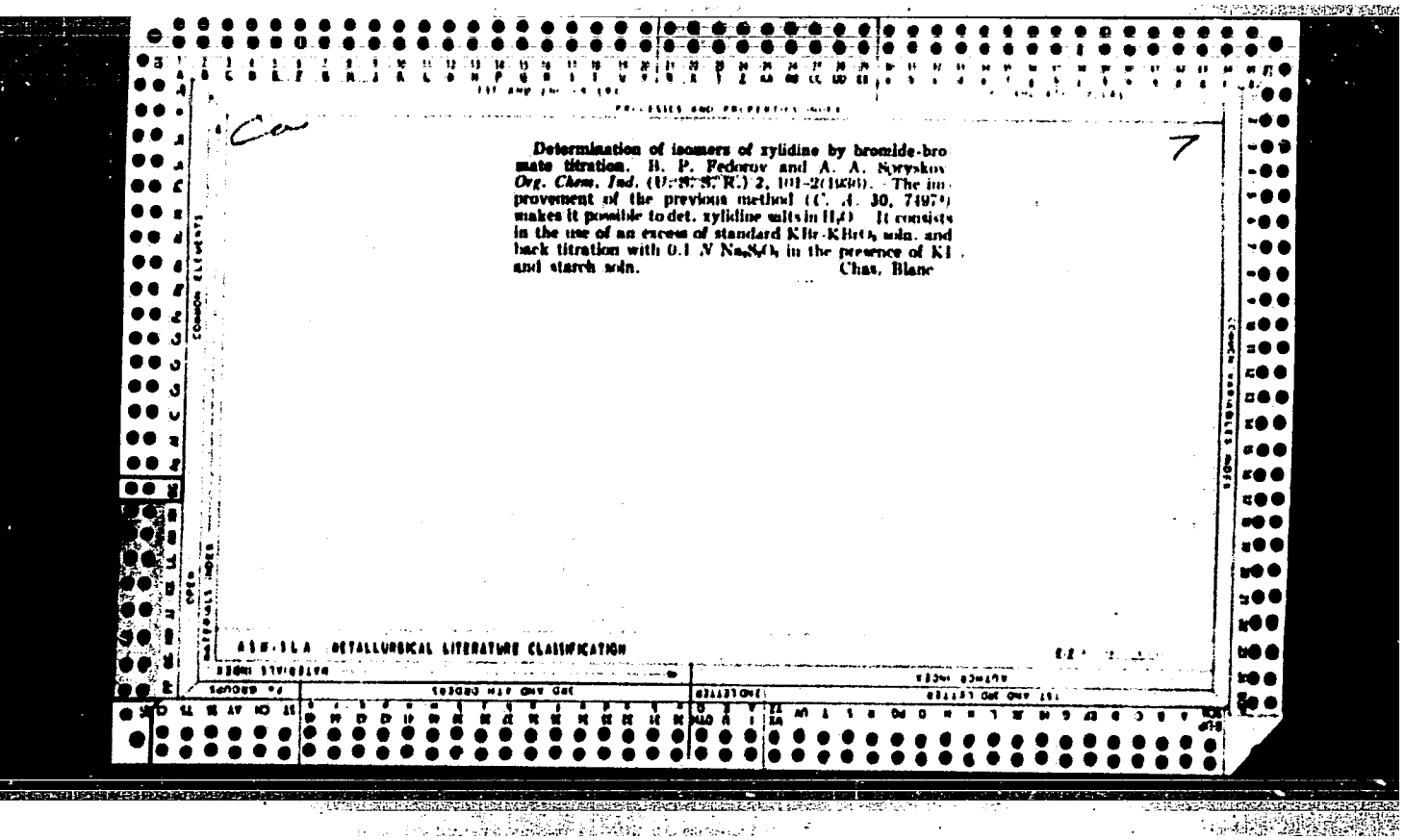
Sulfonation of naphthalene. —N. P. Prikhozhi and A. Spiridonov. *Org. Chem. Ind.* (U. S. S. R.) 1, 191 (1936); cf. *C. A.* 30, 4589.—Expts. on the sulfonation of $C_{10}H_8$ and hydrolysis of $C_{10}H_7SO_3H$ with H_2O and dil. H_2SO_4 show that the sulfonation process is a more complex reaction than is conceived by Martinsen and Ioffe (*C. A.* 28, 2254[6]). The equil. const. depends not only on the rate of sulfonation of $C_{10}H_8$ and the hydrolysis of the $C_{10}H_7SO_3H$ ($C_{10}H_8 + H_2SO_4 \rightleftarrows C_{10}H_7SO_3H + H_2O$), but also on the state of equil. of H_2SO_4 with its hydrates: $H_2SO_4 + nH_2O \rightleftarrows H_2SO_4.nH_2O$. The sulfonation equil. can be shifted to a min. concn. of 80–82% H_2SO_4. While ϵ of sulfonation (Guyot, *C. A.* 16, 404; Courtot, *C. A.* 30, 2439) is an indefinite value, it constitutes that concn. of H_2SO_4 which asymptotically approaches the limit when the sulfonation practically stops. Hence the conception of ϵ of sulfonation is important in the calcns. of amts. of H_2SO_4 required for the sulfonation of org. compds. (cf. Vorozhtsov, Jr., *C. A.* 28, 4002[9]). Chas. Blanc

Production of β-naphthol. R. K. Bikhman and M. Ya. Ilyukevich. *Org. Chem. Ind.* (U. S. S. R.) 1, 722–8 (1936); cf. *C. A.* 29, 408[8]; 30, 5212[8].—The moisture content of β-$C_{10}H_7SO_3Na$ is reduced from 30% to 18–25% by the reversed procedure of introducing $NaCl$ or Na_2SO_4 into the sulfonation product. Various methods of alk. fusion and distn. of β-$C_{10}H_7OH$ are discussed. C. B.

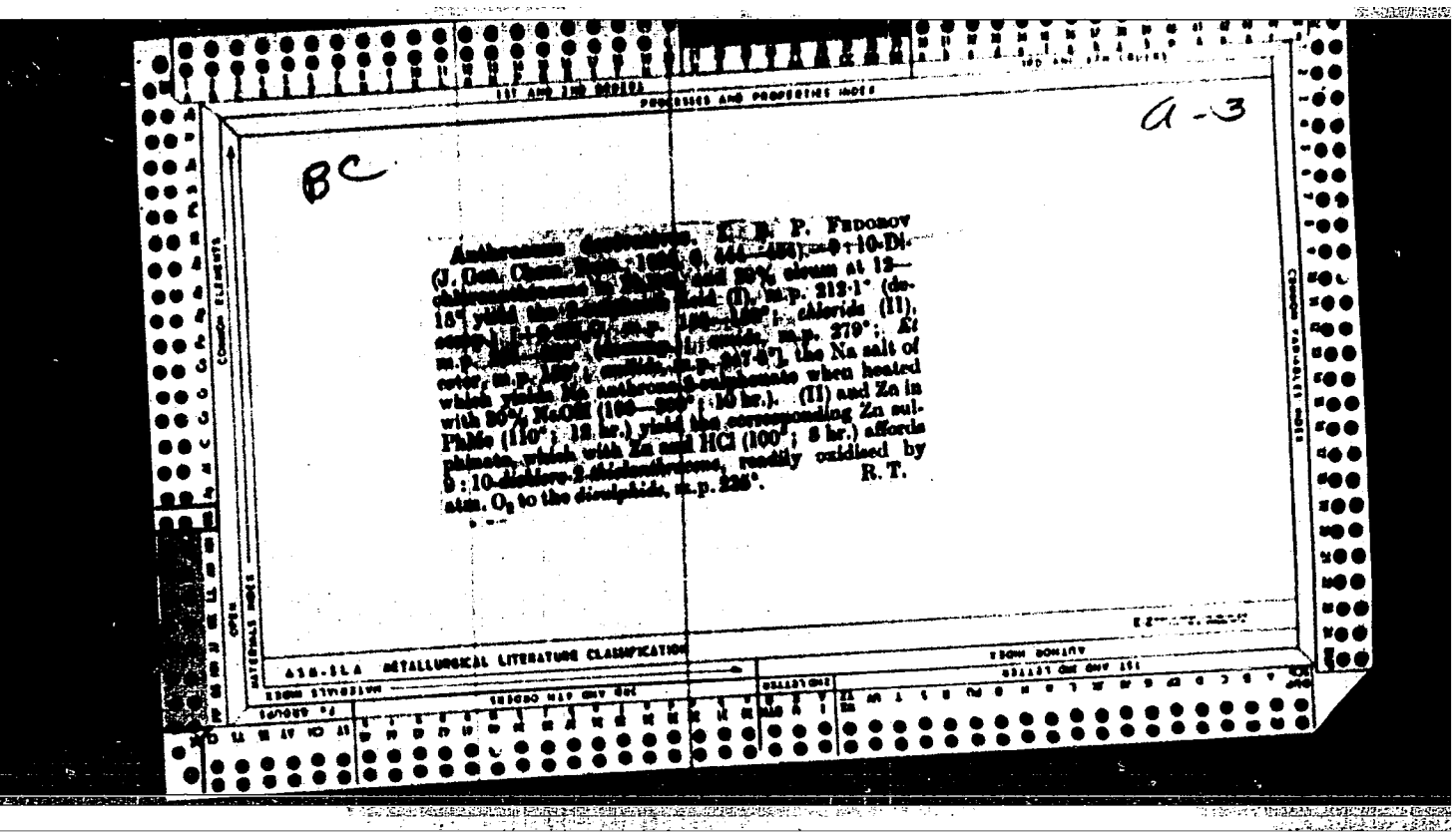
A50-51A METALLURGICAL LITERATURE CLASSIFICATION

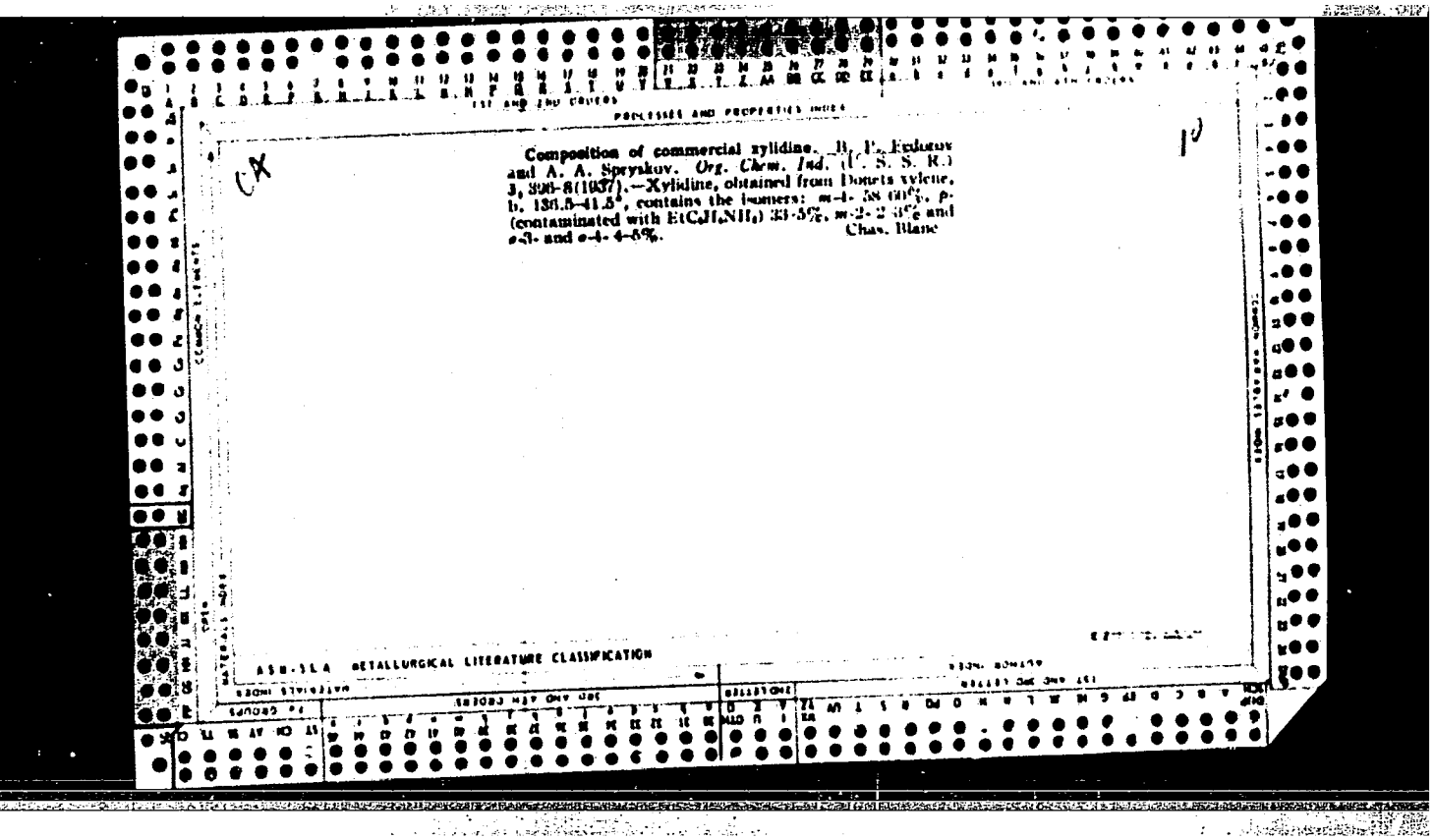


Determination of isomers of xylidine by bromide-bromate titration. B. P. Fedorov and A. A. Spryskov *Org. Chem. Ind.* (U.S.S.R.) 2, 101-2(1936). The improvement of the previous method (*C. A.* 30, 7497) makes it possible to det. xylidine salts in H_2O. It consists in the use of an excess of standard KBr-$KBrO_3$ soln. and back titration with 0.1 *N* $Na_2S_2O_3$ in the presence of KI and starch soln.

Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

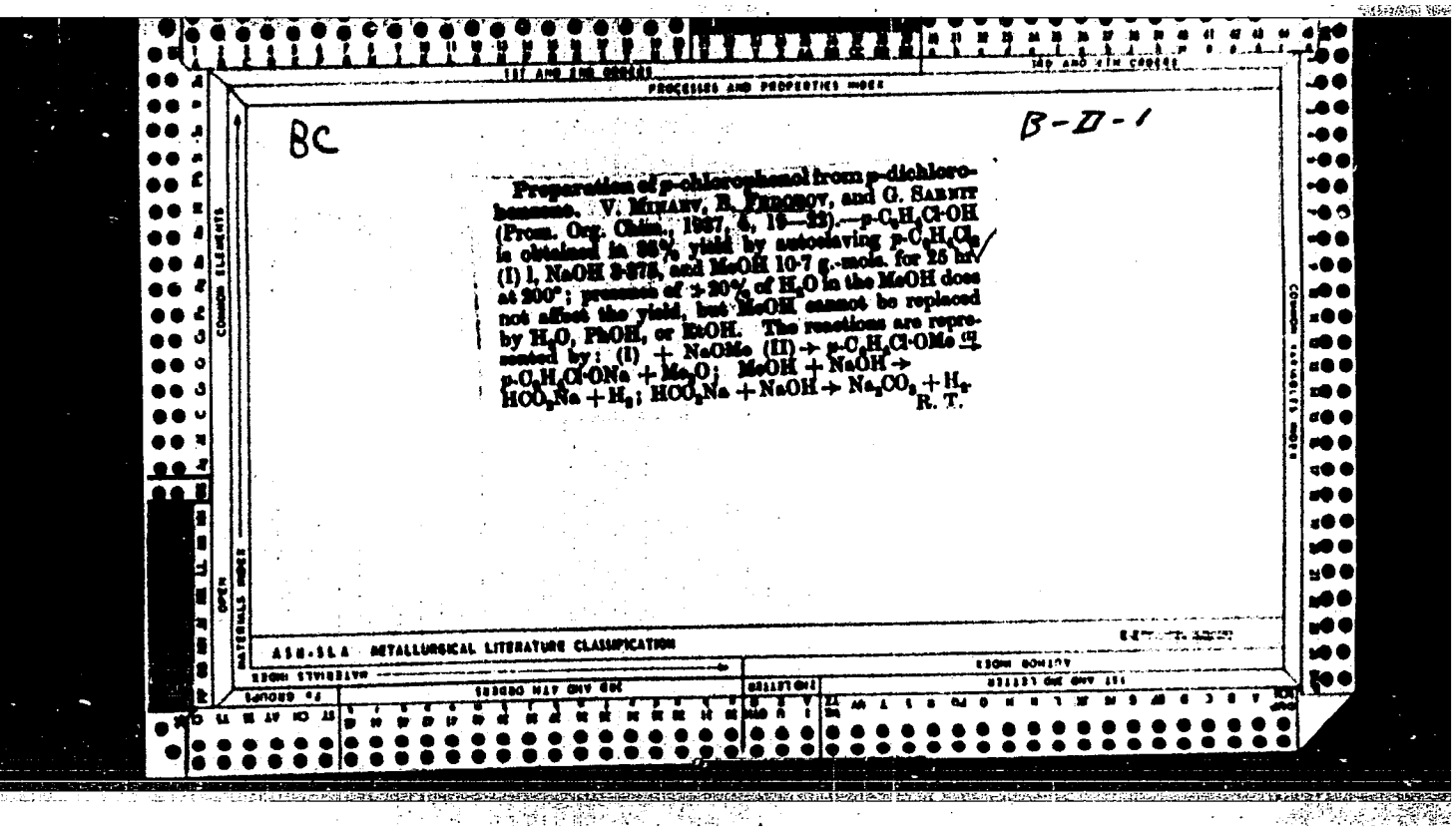




Composition of commercial xylidine. B. P. Egloff and A. A. Spryskov. *Org. Chem. Ind.* (U. S. S. R.) 3, 926-8(1937).—Xylidine, obtained from Doutt xylene, b. 136.5–41.5°, contains the isomers: *m*-1- 58.0(?)%, *p*-(contaminated with $EtC_6H_4NH_2$) 33.5%, *m*-2- 2.5% and *o*-3- and *o*-4- 4–6%.

Chas. Blanc

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

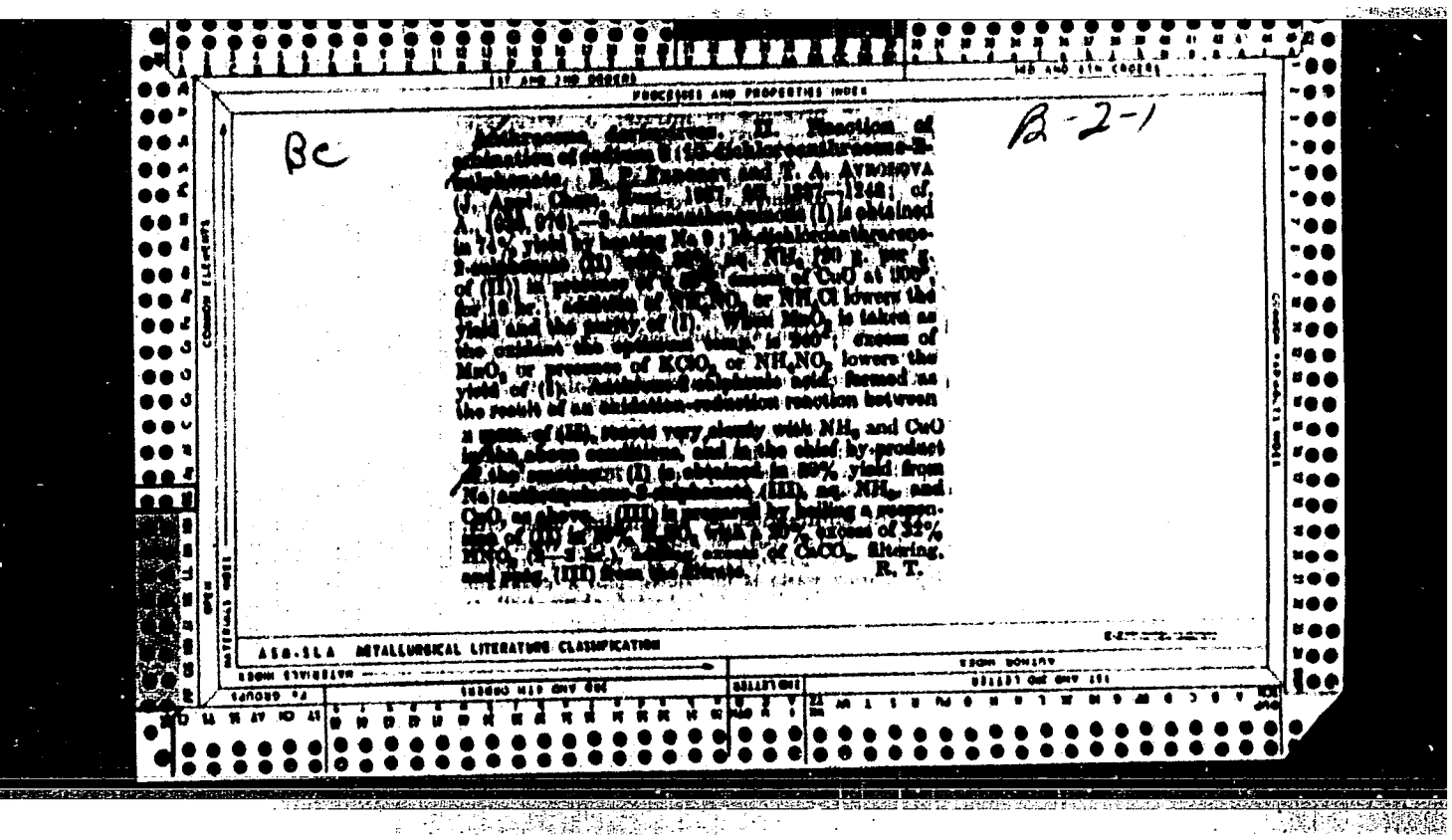


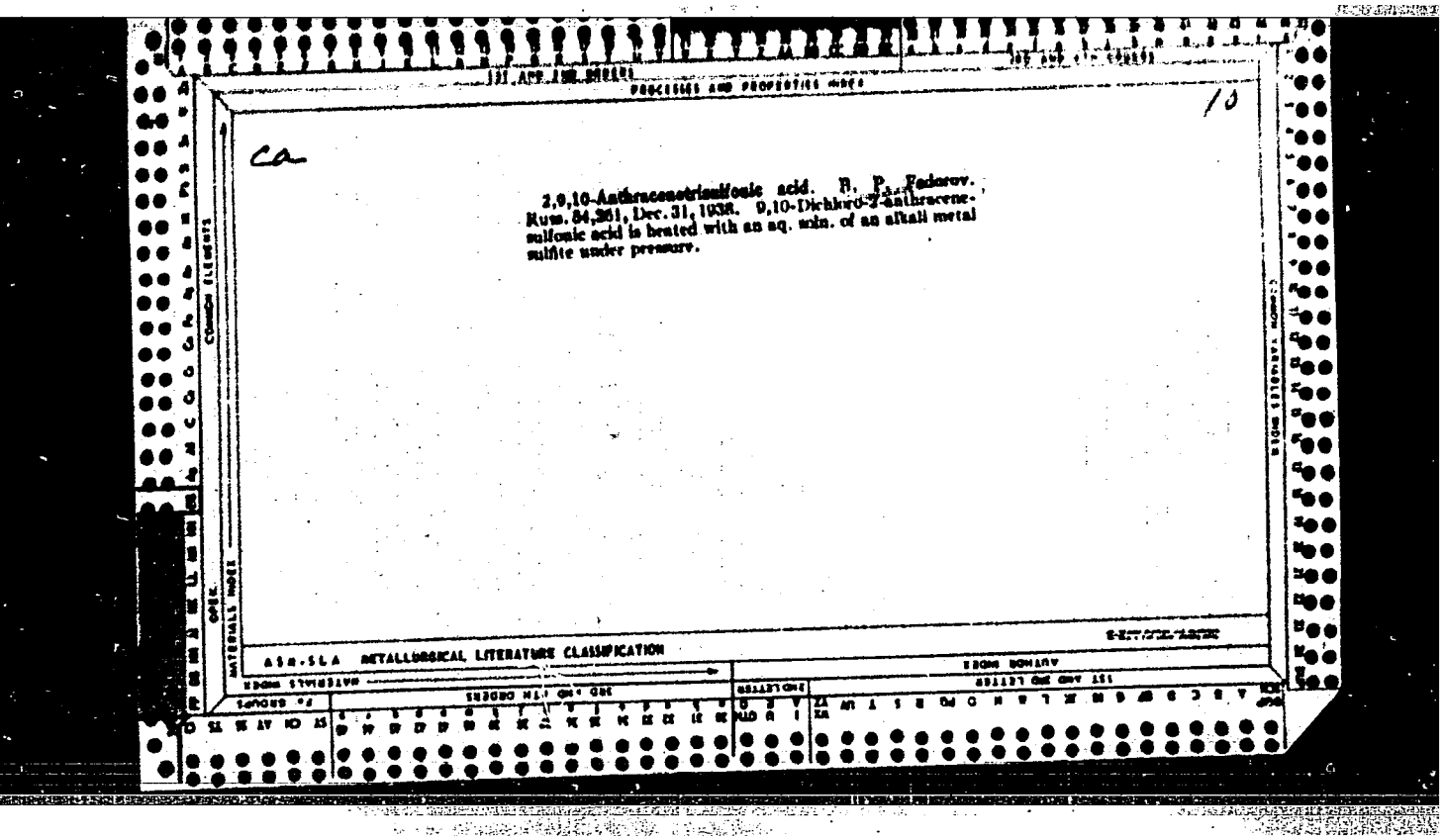
BC

B-II-1

Preparation of p-chlorophenol from p-dichlorobenzene. V. Mihaev, B. Prodkov, and G. Sabnit (Prom. Org. Chim., 1937, 5, 15—25).—p-C_6H_4Cl-OH is obtained in 98% yield by autoclaving p-$C_6H_4Cl_2$ (I) 1, NaOH 3·875, and MeOH 10·7 g.-mols. for 25 hr. at 200°; presence of ≥ 20% of H_2O in the MeOH does not affect the yield, but MeOH cannot be replaced by H_2O, PhOH, or EtOH. The reactions are represented by: (I) + NaOMe (II) → p-C_6H_4Cl-OMe [R. T.]; p-C_6H_4Cl-ONa + Me_2O; MeOH + NaOH → $HCO_2Na + H_2$; HCO_2Na + NaOH → $Na_2CO_3 + H_2$.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



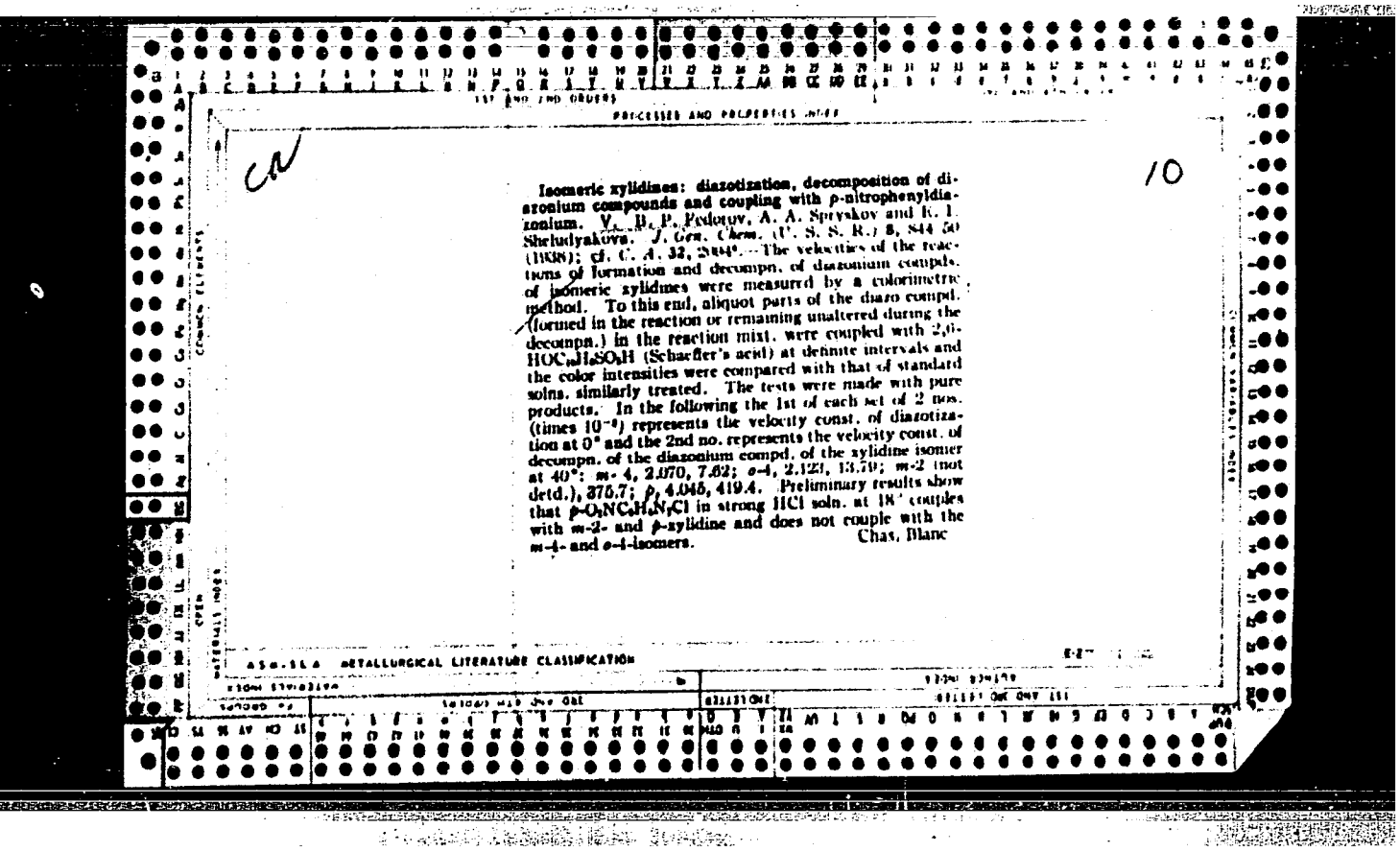


10

Ca

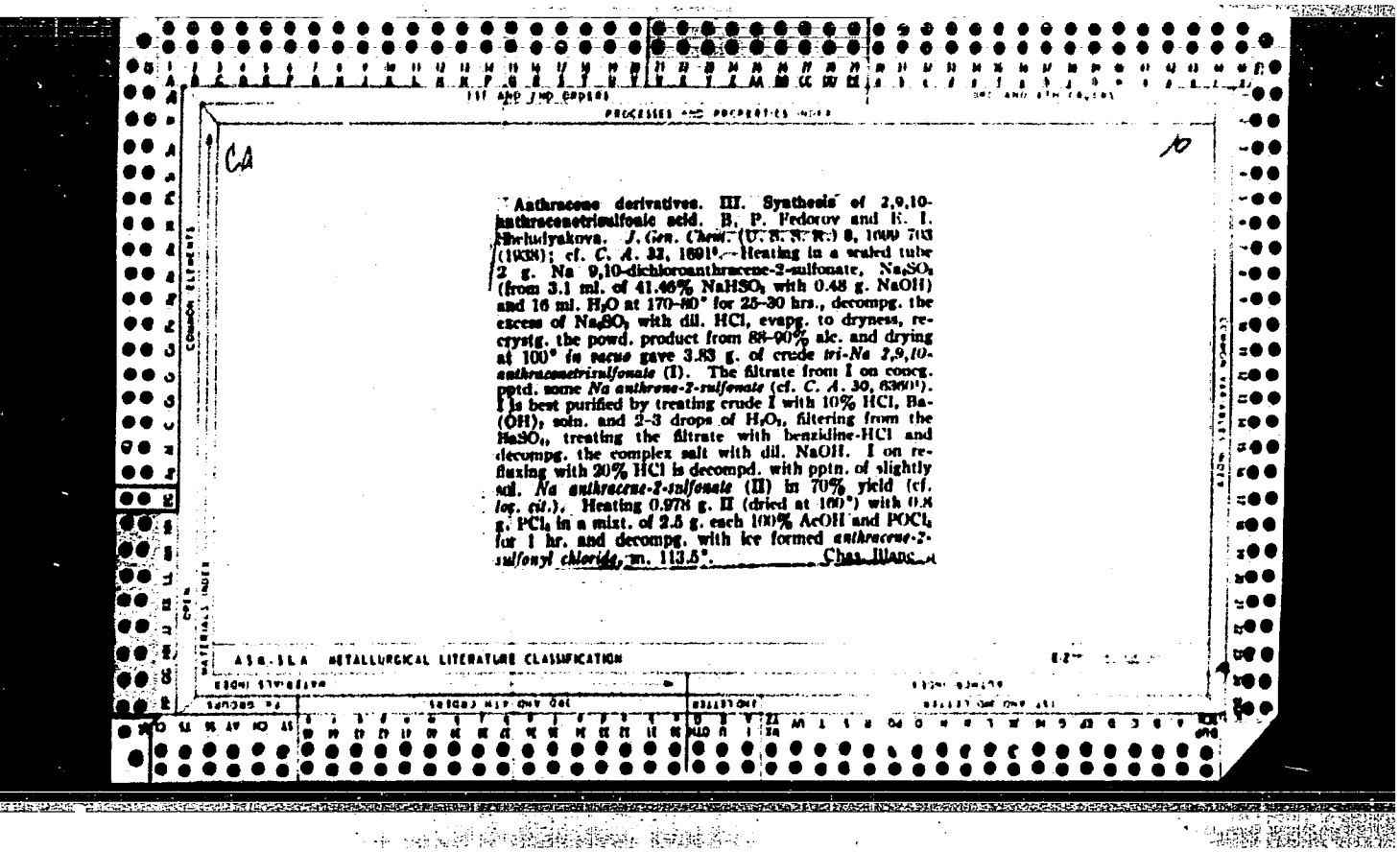
2,9,10-Anthracenetrisulfonic acid. B. P. Fedorov. Russ. 54,261, Dec. 31, 1938. 9,10-Dichloro-2-anthracenesulfonic acid is heated with an aq. soln. of an alkali metal sulfite under pressure.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Isomeric xylidines: diazotization, decomposition of diazonium compounds and coupling with *p*-nitrophenyldiazonium. V. I. P. Fedotov, A. A. Spryskov and K. I. Shchudyakova. *J. Gen. Chem. (U. S. S. R.)* 8, 844-50 (1938); cf. *C. A.* 32, 2844⁶. The velocities of the reactions of formation and decompn. of diazonium compds. of isomeric xylidines were measured by a colorimetric method. To this end, aliquot parts of the diazo compd. (formed in the reaction or remaining unaltered during the decompn.) in the reaction mixt. were coupled with 2,6-$HOC_6H_3SO_3H$ (Schaeffer's acid) at definite intervals and the color intensities were compared with that of standard solns. similarly treated. The tests were made with pure products. In the following the 1st of each set of 2 nos. (times 10^{-4}) represents the velocity const. of diazotization at 0° and the 2nd no. represents the velocity const. of decompn. of the diazonium compd. of the xylidine isomer at 40°: *m*-4, 2.070, 7.62; *o*-4, 2.121, 13.79; *m*-2 (not detd.), 370.7; *p*, 4.045, 419.4. Preliminary results show that $p\text{-}O_2NC_6H_4N_2Cl$ in strong HCl soln. at 18° couples with *m*-2- and *p*-xylidine and does not couple with the *m*-4- and *o*-4-isomers.

Chas. Blanc



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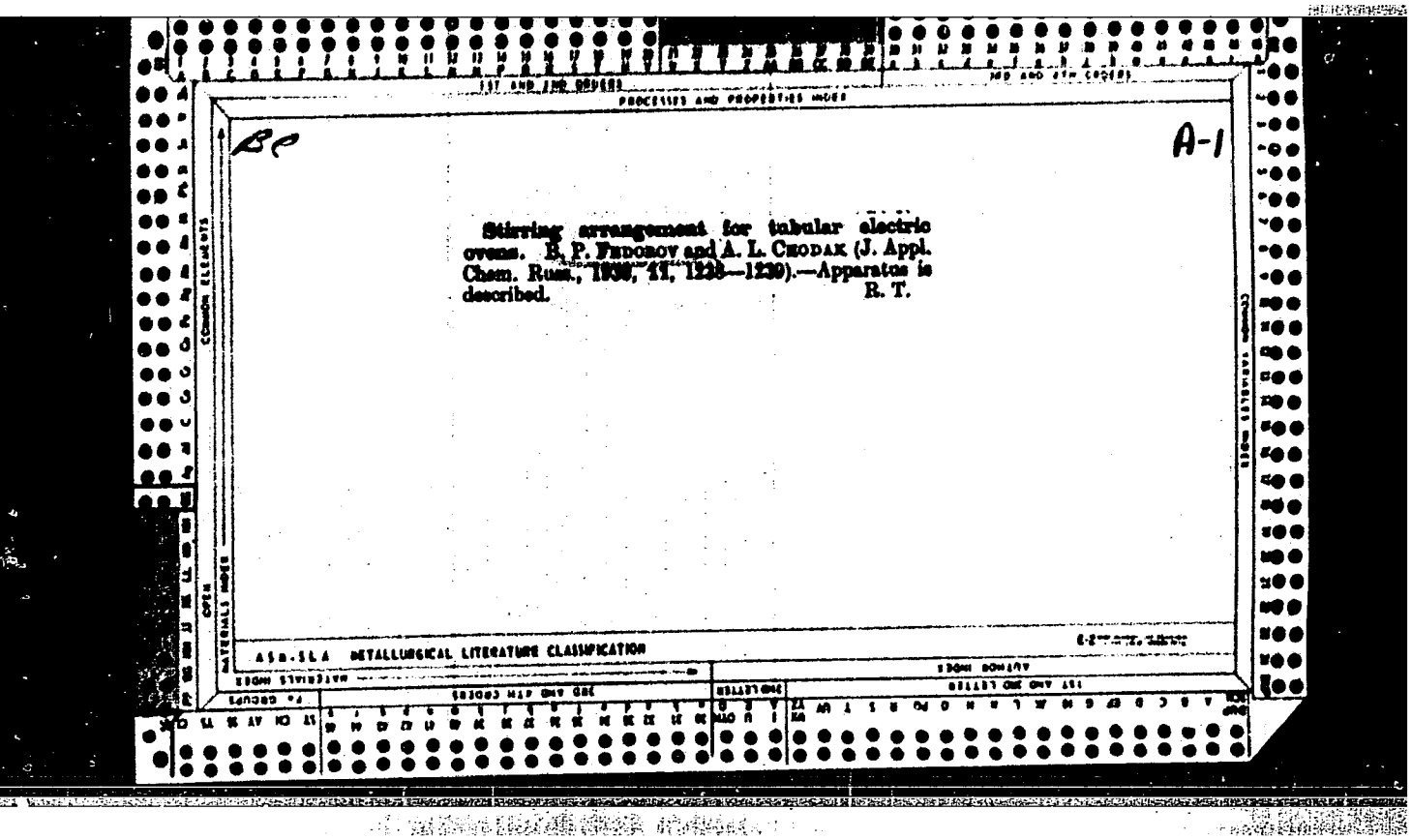
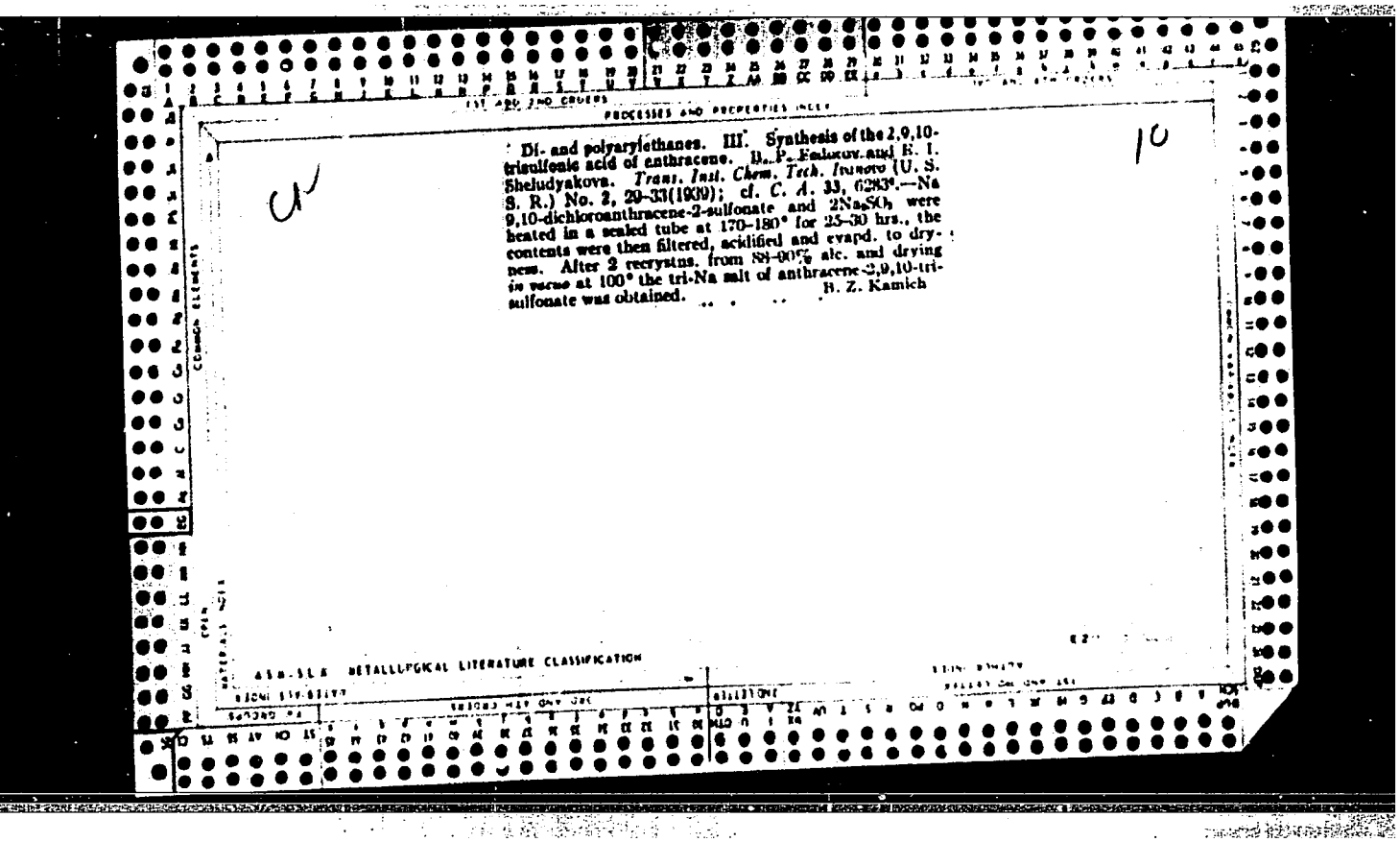
Anthracene derivatives. III. Synthesis of 2,9,10-anthracenetrisulfonic acid. B. P. Fedorov and E. I. Shchudlyakova. *J. Gen. Chem.* (U.S.S.R.) 8, 1089-703 (1938); cf. *C. A.* 32, 1691⁹.—Heating in a sealed tube 2 g. Na 9,10-dichloroanthracene-2-sulfonate, Na_2SO_3 (from 3.1 ml. of 41.46% $NaHSO_3$ with 0.48 g. NaOH) and 16 ml. H_2O at 170–80° for 25–30 hrs., decompg. the excess of Na_2SO_3 with dil. HCl, evapg. to dryness, recrystg. the powd. product from 88–90% alc. and drying at 100° *in vacuo* gave 3.83 g. of crude *tri-Na 2,9,10-anthracenetrisulfonate* (I). The filtrate from I on concg. pptd. some *Na anthrone-2-sulfonate* (cf. *C. A.* 30, 6390⁹). I is best purified by treating crude I with 10% HCl, Ba(OH)₂ soln. and 2–3 drops of H_2O_2, filtering from the $BaSO_4$, treating the filtrate with benzidine-HCl and decompg. the complex salt with dil. NaOH. I on refluxing with 20% HCl is decompd. with pptn. of slightly sol. *Na anthracene-2-sulfonate* (II) in 70% yield (cf. *loc. cit.*). Heating 0.978 g. II (dried at 160°) with 0.8 g. PCl_5 in a mixt. of 2.5 g. each 100% AcOH and $POCl_3$ for 1 hr. and decompg. with ice formed *anthracene-2-sulfonyl chloride*, m. 113.5°. Chas. Illanc



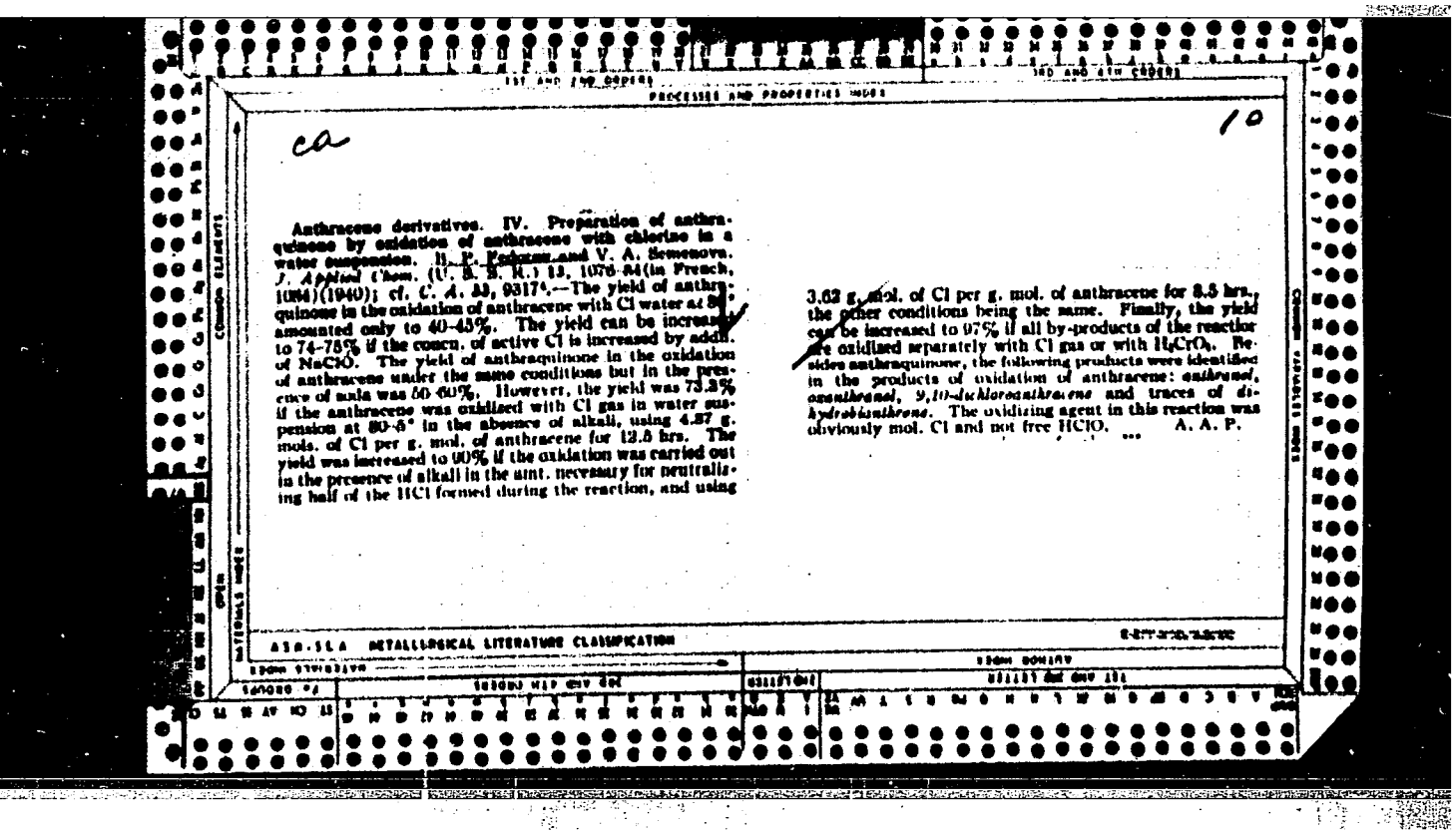
Bc

A-1

Stirring arrangement for tubular electric ovens. B. P. Fedorov and A. L. Chodak (J. Appl. Chem. Russ., 1938, 11, 1228—1230).—Apparatus is described. R. T.



Di- and polyarylethanes. III. Synthesis of the 2,9,10-trisulfonic acid of anthracene. D. P. Feldman and E. I. Sheludyakova. *Trans. Inst. Chem. Tech. Ivanovo* (U. S. S. R.) No. 2, 29–33(1939); cf. *C. A.* 33, 6283⁹.—Na 9,10-dichloroanthracene-2-sulfonate and $2Na_2SO_3$ were heated in a sealed tube at 170–180° for 25–30 hrs., the contents were then filtered, acidified and evapd. to dryness. After 2 recrystns. from 80–90% alc. and drying *in vacuo* at 100° the tri-Na salt of anthracene-2,9,10-trisulfonate was obtained. B. Z. Kamich



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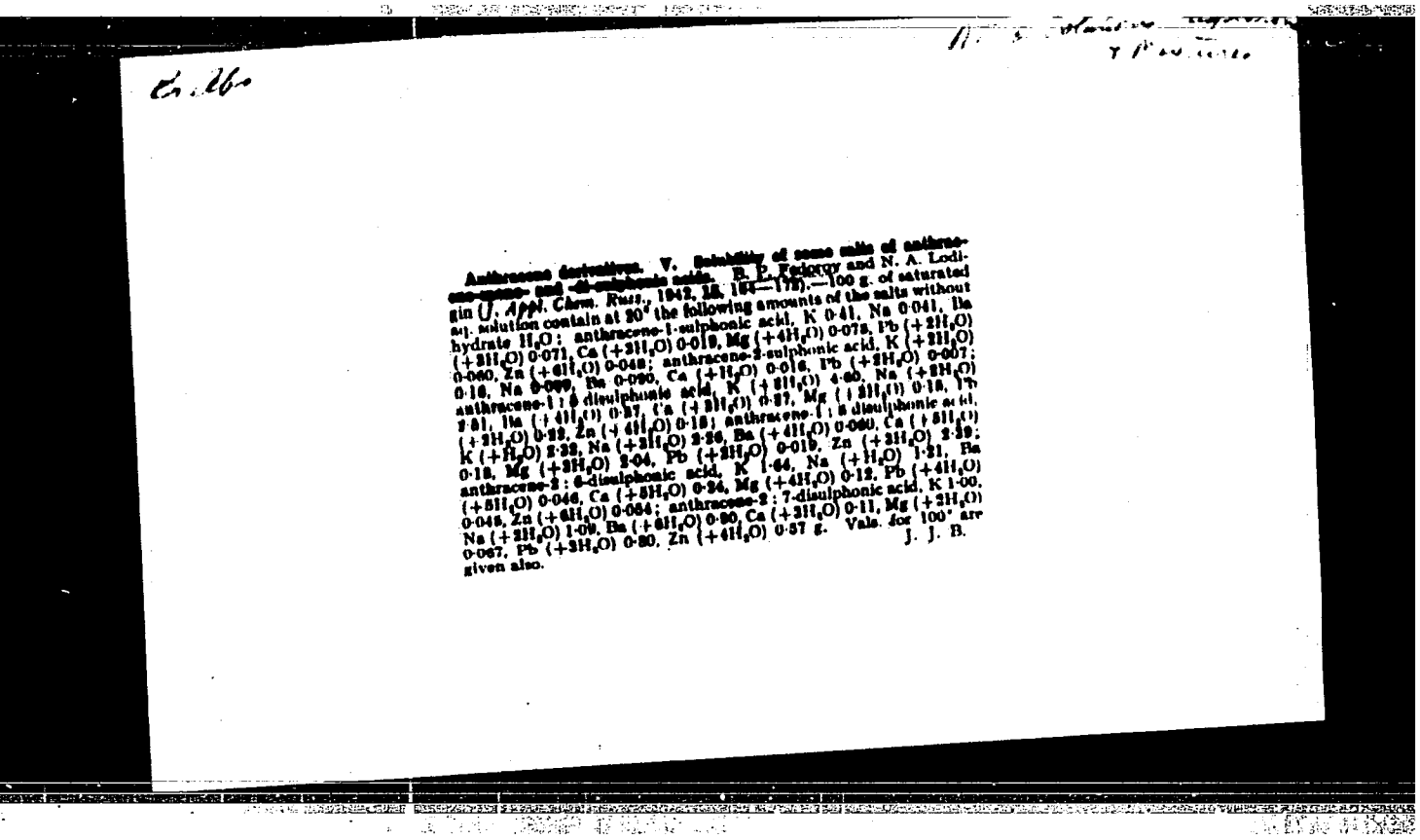
Anthracene derivatives. IV. Preparation of anthraquinone by oxidation of anthracene with chlorine in a water suspension. II. P. Fedotov and V. A. Semenova. *J. Applied Chem.* (U. S. S. R.) 13, 1078-84 (in French, 1084)(1940); cf. *C. A.* 33, 9317⁴.—The yield of anthraquinone in the oxidation of anthracene with Cl water at 80° amounted only to 40-45%. The yield can be increased to 74-75% if the concn. of active Cl is increased by addn. of NaClO. The yield of anthraquinone in the oxidation of anthracene under the same conditions but in the presence of soda was 50-60%. However, the yield was 73.3% if the anthracene was oxidized with Cl gas in water suspension at 80-5° in the absence of alkali, using 4.87 g. mols. of Cl per g. mol. of anthracene for 12.5 hrs. The yield was increased to 90% if the oxidation was carried out in the presence of alkali in the amt. necessary for neutralizing half of the HCl formed during the reaction, and using 3.62 g. mols. of Cl per g. mol. of anthracene for 8.5 hrs., the other conditions being the same. Finally, the yield can be increased to 97% if all by-products of the reaction are oxidized separately with Cl gas or with H_2CrO_4. Besides anthraquinone, the following products were identified in the products of oxidation of anthracene: *anthranol*, *oxanthranol*, *9,10-dichloroanthracene* and traces of *dihydrobianthrone*. The oxidizing agent in this reaction was obviously mol. Cl and not free HClO. A. A. P.

A10-51A METALLURGICAL LITERATURE CLASSIFICATION



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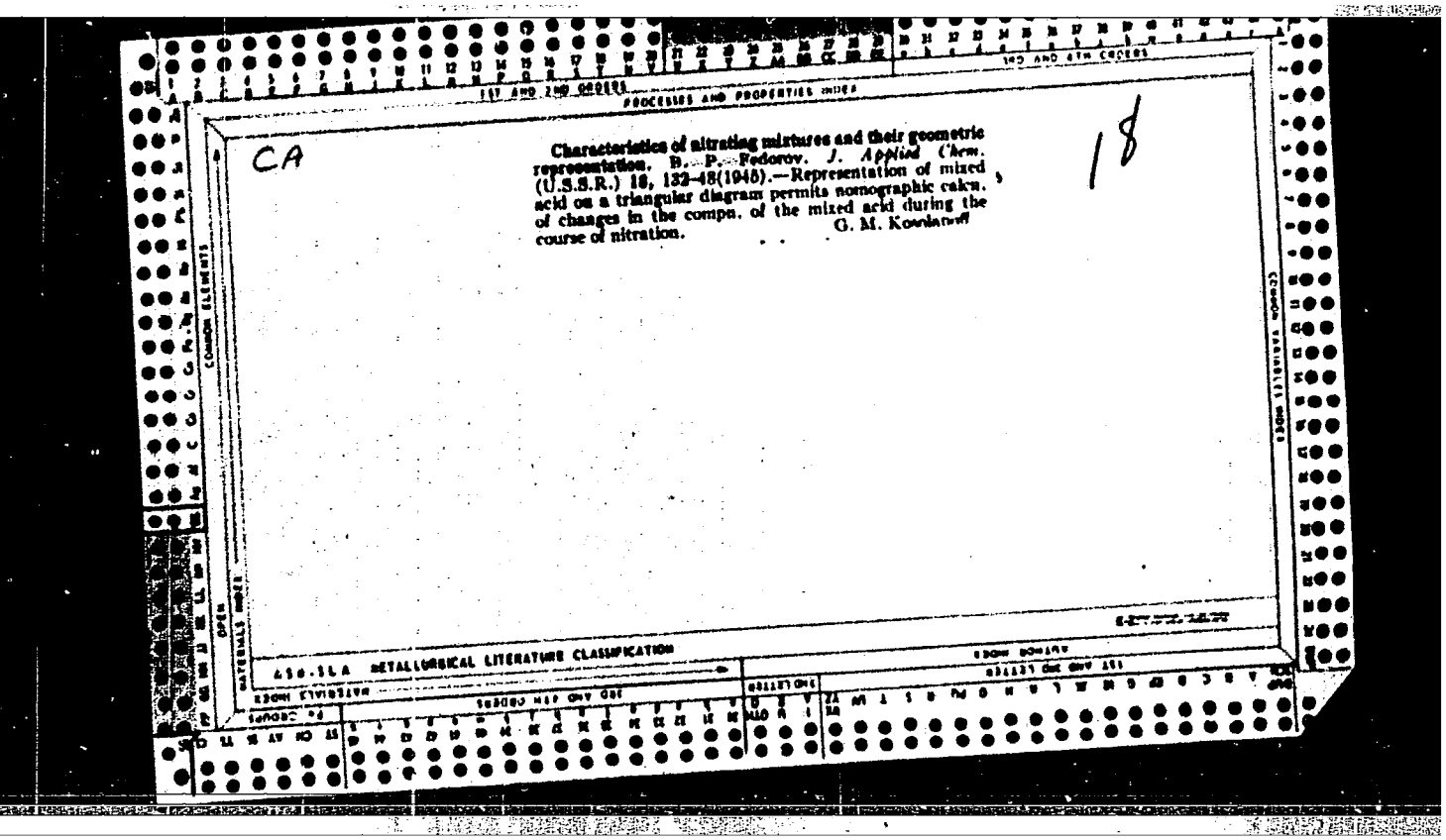
Anthracene derivatives. V. Solubility of some salts of anthracene-mono- and -di-sulphonic acids. B. P. Fedorov and N. A. Lodigin *U. Appl. Chem. Russ.*, 1942, 15, 164—172).—100 g. of saturated aq. solution contain at 20° the following amounts of the salts without hydrate H_2O: anthracene-1-sulphonic acid, K 0·41, Na 0·041, Ba (+$2H_2O$) 0·071, Ca (+$2H_2O$) 0·019, Mg (+$4H_2O$) 0·078, Pb (+$2H_2O$) 0·060, Zn (+$6H_2O$) 0·048; anthracene-2-sulphonic acid, K (+$2H_2O$) 0·10, Na 0·099, Ba 0·090, Ca (+H_2O) 0·016, Pb (+$2H_2O$) 0·007; anthracene-1 : 5 disulphonic acid, K (+$2H_2O$) 4·80, Na (+$2H_2O$) 2·81, Ba (+$4H_2O$) 0·27, Ca (+$2H_2O$) 0·27, Mg (+$4H_2O$) 0·18, Pb (+$2H_2O$) 0·22, Zn (+$4H_2O$) 0·18; anthracene-1 : 8 disulphonic acid, K (+H_2O) 2·32, Na (+$2H_2O$) 2·26, Ba (+$4H_2O$) 0·060, Ca (+$2H_2O$) 0·18, Mg (+$2H_2O$) 2·04, Pb (+$2H_2O$) 0·019, Zn (+$2H_2O$) 2·29; anthracene-2 : 6-disulphonic acid, K 1·64, Na (+H_2O) 1·21, Ba (+$5H_2O$) 0·046, Ca (+$5H_2O$) 0·24, Mg (+$4H_2O$) 0·12, Pb (+$4H_2O$) 0·048, Zn (+$6H_2O$) 0·084; anthracene-2 : 7-disulphonic acid, K 1·00, Na (+$2H_2O$) 1·09, Ba (+$4H_2O$) 0·90, Ca (+$2H_2O$) 0·11, Mg (+$2H_2O$) 0·067, Pb (+$2H_2O$) 0·80, Zn (+$4H_2O$) 0·57 g. Vals. for 100° are given also.

J. J. B.



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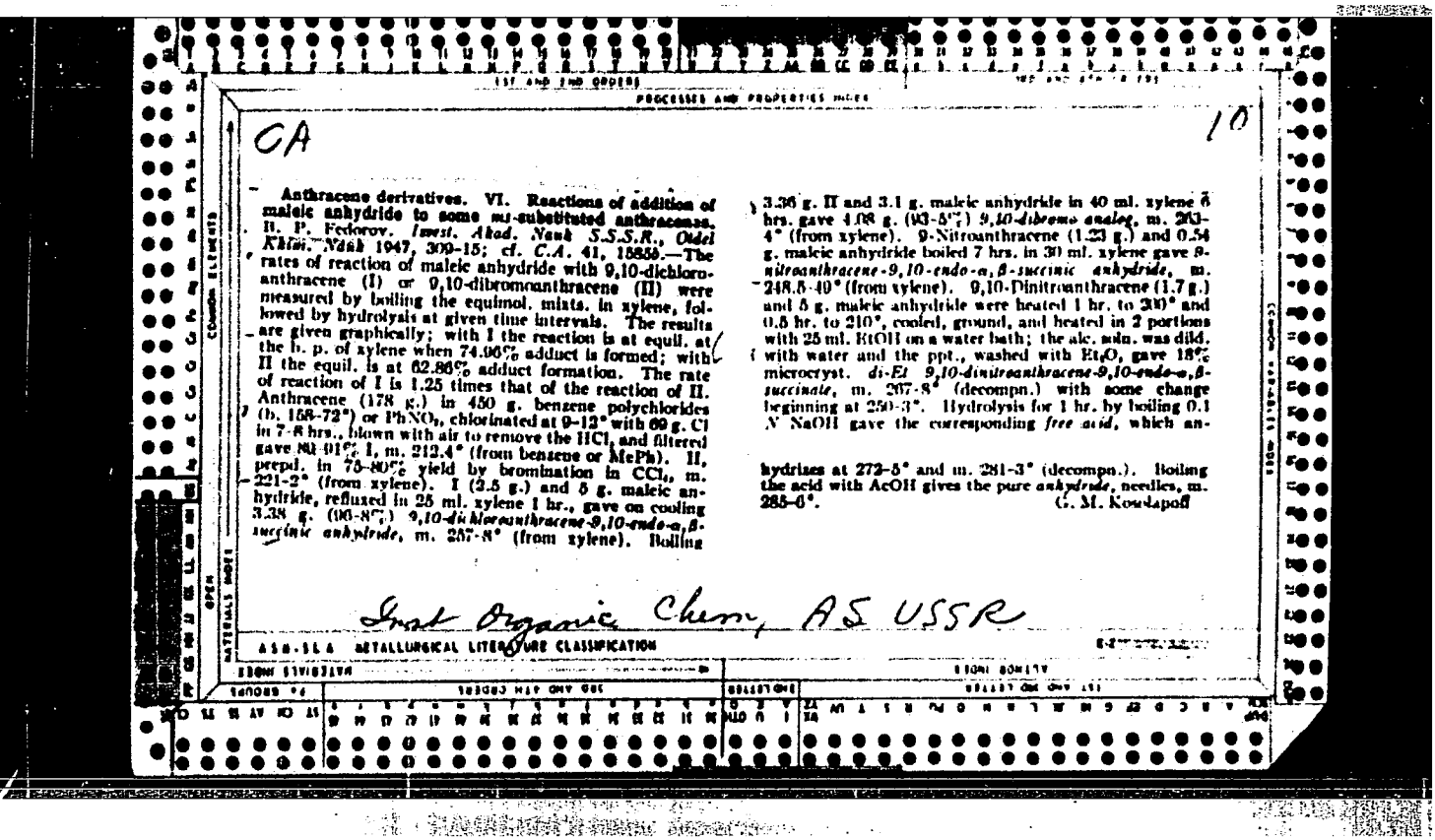
Characteristics of nitrating mixtures and their geometric representation. B. P. Fedorov. *J. Applied Chem.* (U.S.S.R.) 18, 132-48(1945).—Representation of mixed acid on a triangular diagram permits nomographic calcn. of changes in the compn. of the mixed acid during the course of nitration. G. M. Kosolapoff



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Anthracene derivatives. VI. Reactions of addition of maleic anhydride to some *meso*-substituted anthracenes. N. P. Fedorov. *Izvest. Akad. Nauk S.S.S.R., Otdel Khim. Nauk* 1947, 309–15; *cf. C.A.* 41, 1585b.—The rates of reaction of maleic anhydride with 9,10-dichloroanthracene (I) or 9,10-dibromoanthracene (II) were measured by boiling the equimol. mixts. in xylene, followed by hydrolysis at given time intervals. The results are given graphically; with I the reaction is at equil. at the b. p. of xylene when 74.06% adduct is formed; with II the equil. is at 62.86% adduct formation. The rate of reaction of I is 1.25 times that of the reaction of II. Anthracene (178 g.) in 450 g. benzene polychlorides (b. 158–72°) or $PhNO_2$, chlorinated at 9–12° with 69 g. Cl in 7–8 hrs., blown with air to remove the HCl, and filtered gave 80–91% I, m. 213.4° (from benzene or MePh). II, prepd. in 75–80% yield by bromination in CCl_4, m. 221–2° (from xylene). I (2.5 g.) and 5 g. maleic anhydride, refluxed in 25 ml. xylene 1 hr., gave on cooling 3.38 g. (96–8%) *9,10-dichloroanthracene-9,10-endo-α,β-succinic anhydride*, m. 287–8° (from xylene). Boiling 3.36 g. II and 3.1 g. maleic anhydride in 40 ml. xylene 6 hrs. gave 4.08 g. (93–5%) *9,10-dibromo analog*, m. 283–4° (from xylene). 9-Nitroanthracene (1.23 g.) and 0.54 g. maleic anhydride boiled 7 hrs. in 30 ml. xylene gave *9-nitroanthracene-9,10-endo-α,β-succinic anhydride*, m. 248.8–49° (from xylene). 9,10-Dinitroanthracene (1.7 g.) and 5 g. maleic anhydride were heated 1 hr. to 200° and 0.5 hr. to 210°, cooled, ground, and heated in 2 portions with 25 ml. EtOH on a water bath; the alc. soln. was dild. with water and the ppt., washed with Et_2O, gave 18% microcryst. *di-Et 9,10-dinitroanthracene-9,10-endo-α,β-succinate*, m. 207–8° (decompn.) with some change beginning at 250–3°. Hydrolysis for 1 hr. by boiling 0.1 *N* NaOH gave the corresponding *free acid*, which anhydrizes at 272–5° and m. 281–3° (decompn.). Boiling the acid with AcOH gives the pure *anhydride*, needles, m. 285–6°.

G. M. Kosolapoff

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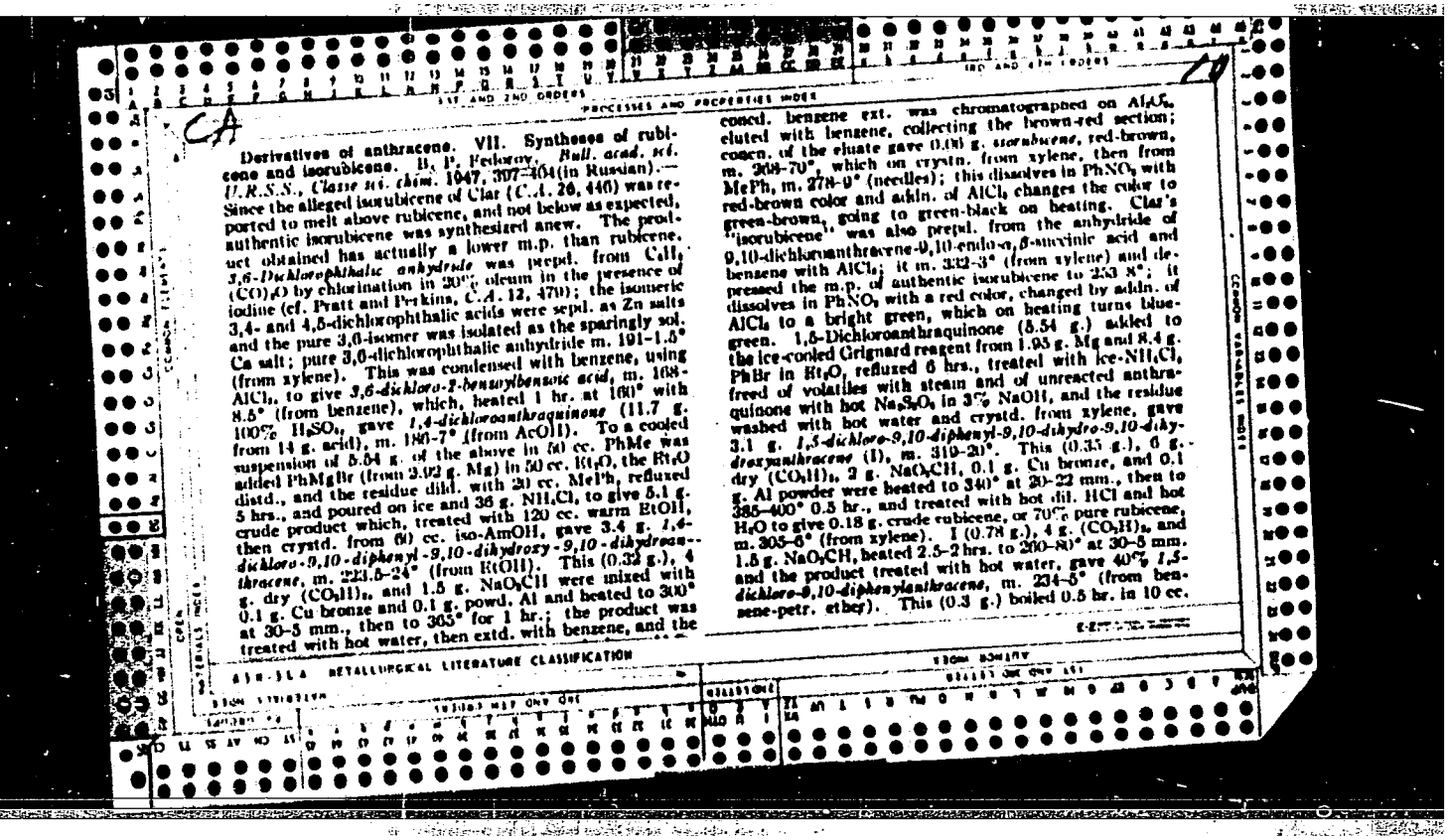

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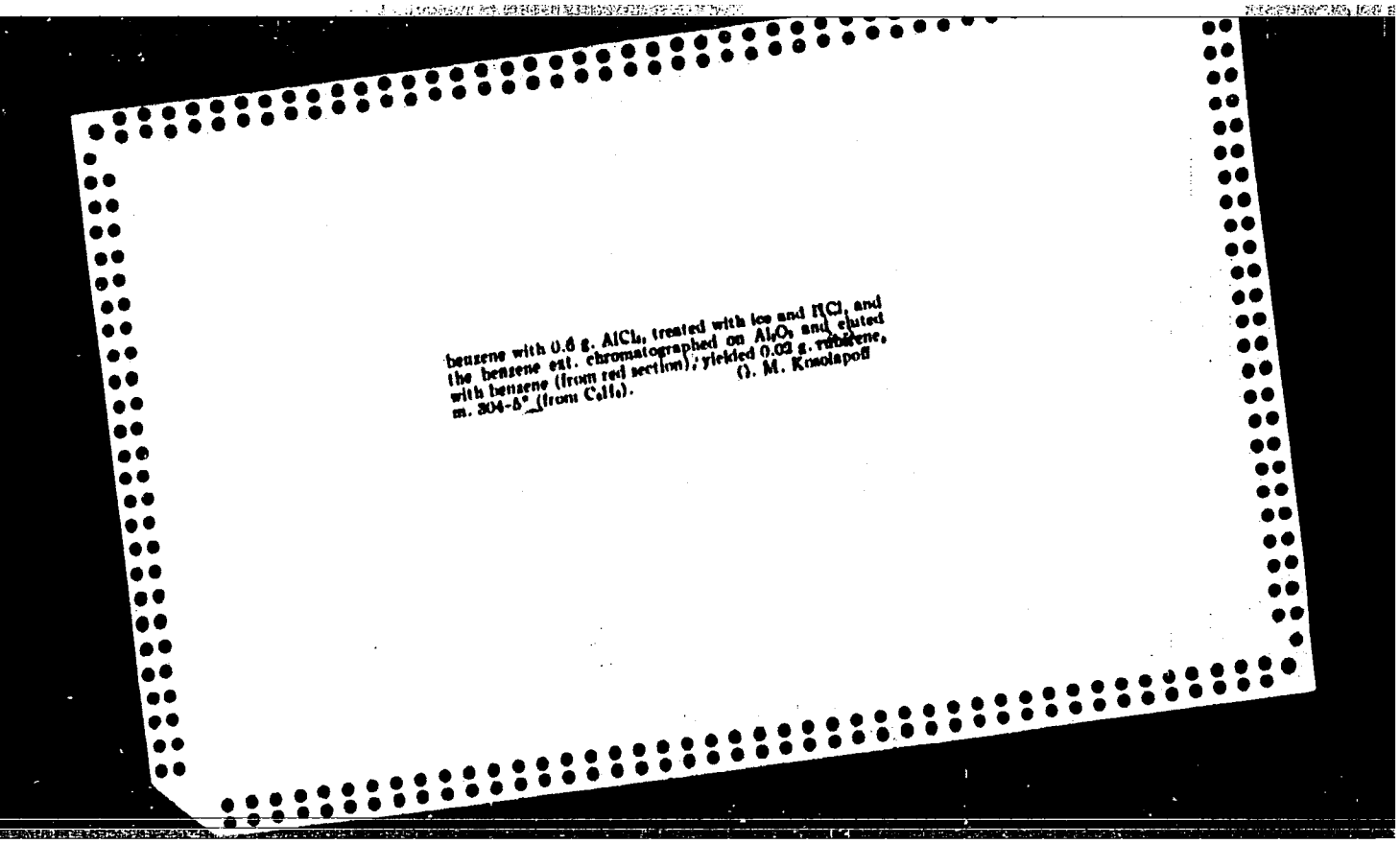
Derivatives of anthracene. VII. Syntheses of rubicene and isorubicene. B. P. Fedoseev. *Bull. acad. sci. U.R.S.S., Classe sci. chim.* 1947, 397–404 (in Russian).—Since the alleged isorubicene of Clar (*C.A.* 26, 446) was reported to melt above rubicene, and not below as expected, authentic isorubicene was synthesized anew. The product obtained has actually a lower m.p. than rubicene. *3,6-Dichlorophthalic anhydride* was prepd. from C_6H_6, $(CO)_2O$ by chlorination in 20% oleum in the presence of iodine (cf. Pratt and Perkins, *C.A.* 12, 479); the isomeric 3,4- and 4,5-dichlorophthalic acids were sepd. as Zn salts and the pure 3,6-isomer was isolated as the sparingly sol. Ca salt; pure 3,6-dichlorophthalic anhydride m. 191–1.5° (from xylene). This was condensed with benzene, using $AlCl_3$, to give *3,6-dichloro-2-benzylbenzoic acid*, m. 168–8.5° (from benzene), which, heated 1 hr. at 160° with 100% H_2SO_4, gave *1,4-dichloroanthraquinone* (11.7 g. from 14 g. acid), m. 186–7° (from AcOH). To a cooled suspension of 5.54 g. of the above in 50 cc. Et_2O, the Et_2O added PhMgBr (from 3.92 g. Mg) in 50 cc. Et_2O, the Et_2O distd., and the residue dild. with 20 cc. MePh, refluxed 5 hrs., and poured on ice and 36 g. NH_4Cl, to give 5.1 g. crude product which, treated with 120 cc. warm EtOH, then crystd. from 60 cc. iso-AmOH, gave 3.4 g. *1,4-dichloro-9,10-diphenyl-9,10-dihydroxy-9,10-dihydroanthracene*, m. 223.5–24° (from EtOH). This (0.32 g.), 4 g. dry $(CO_2H)_2$, and 1.5 g. NaO_2CH were mixed with 0.1 g. Cu bronze and 0.1 g. powd. Al and heated to 300° at 30–5 mm., then to 365° for 1 hr.; the product was treated with hot water, then extd. with benzene, and the concd. benzene ext. was chromatographed on Al_2O_3, eluted with benzene, collecting the brown-red section; concn. of the eluate gave 0.03 g. *isorubicene*, red-brown, m. 368–70°, which on crystn. from xylene, then from MePh, m. 378–9° (needles); this dissolves in $PhNO_2$ with red-brown color and addn. of $AlCl_3$ changes the color to green-brown, going to green-black on heating. Clar's "isorubicene" was also prepd. from the anhydride of 9,10-dichloroanthracene-9,10-endo-α,β-succinic acid and benzene with $AlCl_3$; it m. 332–3° (from xylene) and depressed the m.p. of authentic isorubicene to 353 8°; it dissolves in $PhNO_2$ with a red color, changed by addn. of $AlCl_3$ to a bright green, which on heating turns blue-green. 1,5-Dichloroanthraquinone (5.54 g.) added to the ice-cooled Grignard reagent from 1.95 g. Mg and 8.4 g. PhBr in Et_2O, refluxed 6 hrs., treated with ice-NH_4Cl, freed of volatiles with steam and of unreacted anthraquinone with hot $Na_2S_2O_4$ in 3% NaOH, and the residue washed with hot water and crystd. from xylene, gave 3.1 g. *1,5-dichloro-9,10-diphenyl-9,10-dihydro-9,10-dihydroxyanthracene* (I), m. 319–20°. This (0.35 g.), 6 g. dry $(CO_2H)_2$, 2 g. NaO_2CH, 0.1 g. Cu bronze, and 0.1 g. Al powder were heated to 340° at 20–22 mm., then to 385–400° 0.5 hr., and treated with hot dil. HCl and hot H_2O to give 0.18 g. crude rubicene, or 70% pure rubicene, m. 305–6° (from xylene). I (0.78 g.), 4 g. $(CO_2H)_2$, and 1.5 g. NaO_2CH, heated 2.5–2 hrs. to 200–80° at 30–5 mm. and the product treated with hot water, gave 40% *1,5-dichloro-9,10-diphenylanthracene*, m. 234–5° (from benzene-petr. ether). This (0.3 g.) boiled 0.5 hr. in 10 cc.



benzene with 0.6 g. $AlCl_3$, treated with ice and HCl, and the benzene ext. chromatographed on Al_2O_3 and eluted with benzene (from red section); yielded 0.02 g. rubrene, m. 304-5° (from CaH_4).

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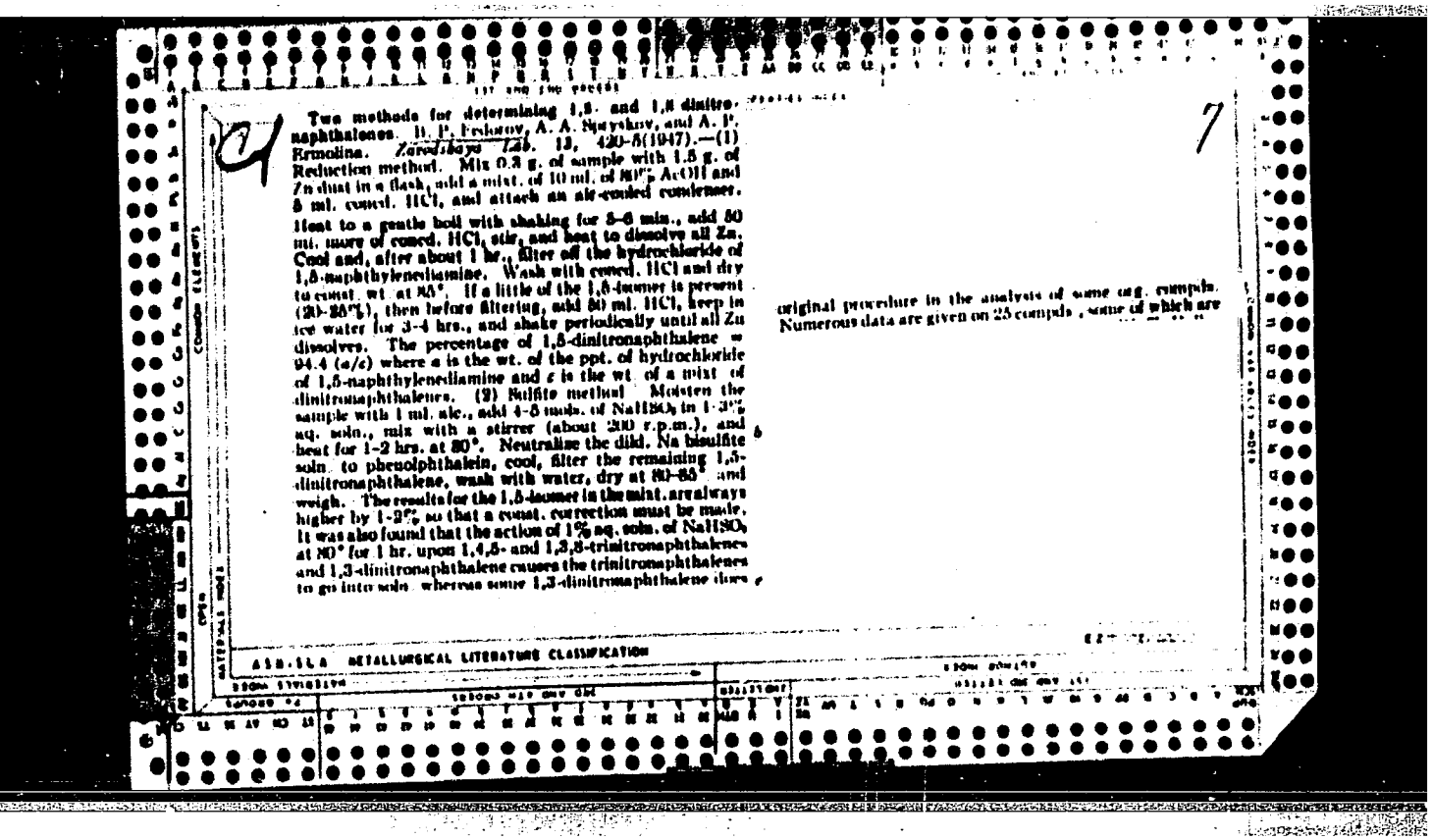

Two methods for determining 1,5- and 1,8-dinitronaphthalenes. B. P. Frolov, A. A. Spryskov, and A. P. Ermolina. *Zavodskaya Lab.* 13, 420-5(1947).—(1) Reduction method. Mix 0.3 g. of sample with 1.5 g. of Zn dust in a flask, add a mixt. of 10 ml. of 80% AcOH and 5 ml. concd. HCl, and attach an air-cooled condenser. Heat to a gentle boil with shaking for 5–6 min., add 50 ml. more of concd. HCl, stir, and heat to dissolve all Zn. Cool and, after about 1 hr., filter off the hydrochloride of 1,5-naphthylenediamine. Wash with concd. HCl and dry to const. wt. at 85°. If a little of the 1,5-isomer is present (20–25%), then before filtering, add 50 ml. HCl, keep in ice water for 3–4 hrs., and shake periodically until all Zn dissolves. The percentage of 1,5-dinitronaphthalene = 94.4 (a/c) where a is the wt. of the ppt. of hydrochloride of 1,5-naphthylenediamine and c is the wt. of a mixt. of dinitronaphthalenes. (2) Sulfite method. Moisten the sample with 1 ml. alc., add 4–5 mols. of $NaHSO_3$ in 1–3% aq. soln., mix with a stirrer (about 200 r.p.m.), and heat for 1–2 hrs. at 80°. Neutralize the dild. Na bisulfite soln. to phenolphthalein, cool, filter the remaining 1,5-dinitronaphthalene, wash with water, dry at 80–85° and weigh. The results for the 1,5-isomer in the mixt. are always higher by 1–2%, so that a const. correction must be made. It was also found that the action of 1% aq. soln. of $NaHSO_3$ at 80° for 1 hr. upon 1,4,5- and 1,3,8-trinitronaphthalenes and 1,3-dinitronaphthalene causes the trinitronaphthalenes to go into soln. whereas some 1,3-dinitronaphthalene does

original procedure in the analysis of some org. compds. Numerous data are given on 25 compds., some of which are

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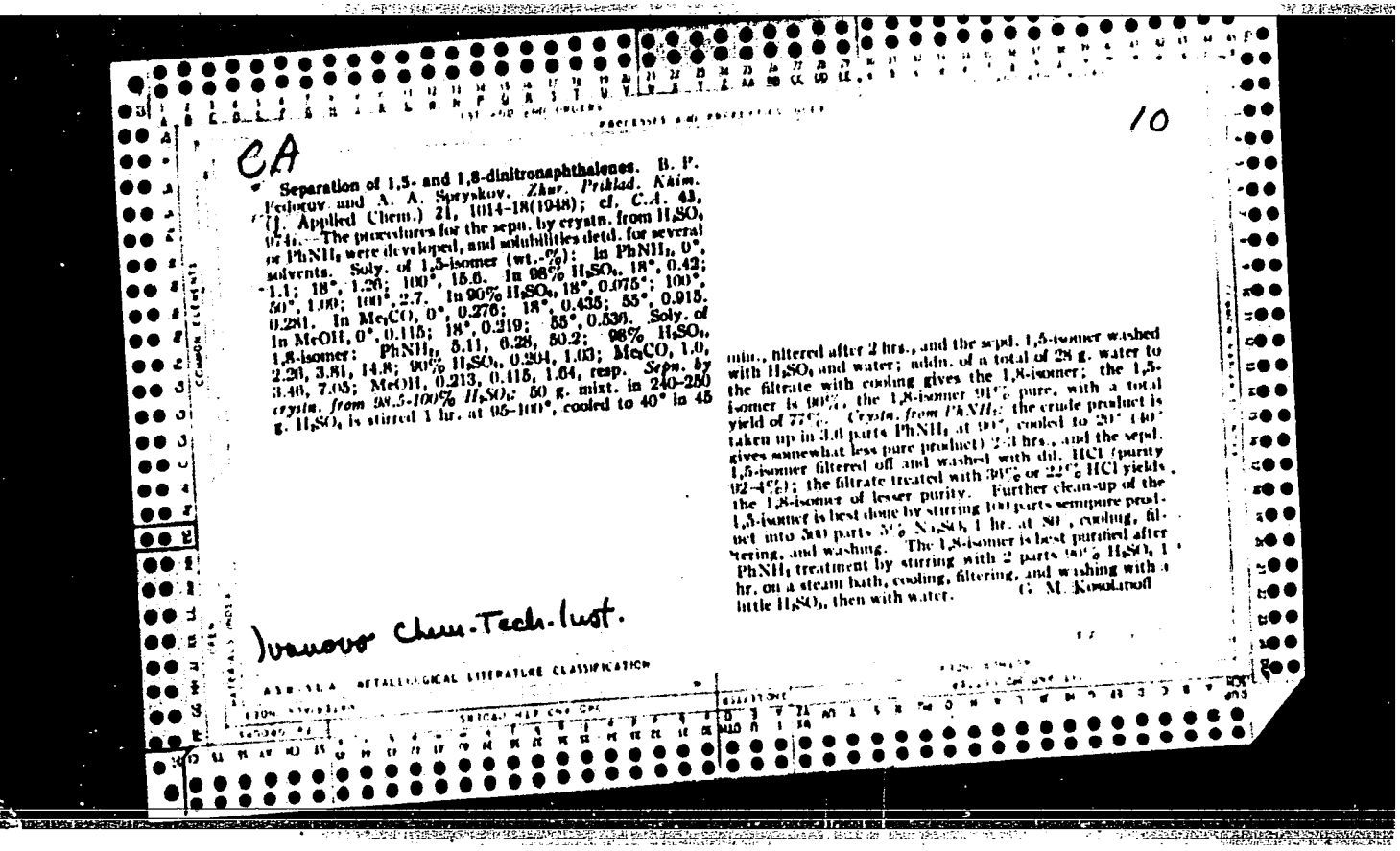

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Separation of 1,5- and 1,8-dinitronaphthalenes. B. P. Fedorov and A. A. Spryskov. *Zhur. Prikład. Khim.* (J. Applied Chem.) 21, 1014–18(1948); *cf. C.A.* 43, 9744.—The procedures for the sepn. by crystn. from H_2SO_4 or $PhNH_2$ were developed, and solubilities detd. for several solvents. Soly. of 1,5-isomer (wt.-%): In $PhNH_2$, 0°, 1.1; 18°, 1.20; 100°, 15.6. In 98% H_2SO_4, 18°, 0.42; 50°, 1.00; 100°, 2.7. In 90% H_2SO_4, 18°, 0.075°; 100°, 0.281. In Me_2CO, 0°, 0.276; 18°, 0.435; 55°, 0.915. In MeOH, 0°, 0.115; 18°, 0.219; 55°, 0.539. Soly. of 1,8-isomer: $PhNH_2$, 5.11, 6.28, 50.2; 98% H_2SO_4, 2.20, 3.81, 14.8; 90% H_2SO_4, 0.204, 1.03; Me_2CO, 1.0, 3.40, 7.05; MeOH, 0.213, 0.415, 1.64, resp. *Sepn. by crystn. from 98.5-100% H_2SO_4:* 50 g. mixt. in 240–250 g. H_2SO_4 is stirred 1 hr. at 95–100°, cooled to 40° in 45 min., filtered after 2 hrs., and the sepd. 1,5-isomer washed with H_2SO_4 and water; addn. of a total of 28 g. water to the filtrate with cooling gives the 1,8-isomer; the 1,5-isomer is 100% pure, the 1,8-isomer 91% pure, with a total yield of 77%. *Crystn. from $PhNH_2$:* the crude product is taken up in 3.0 parts $PhNH_2$ at 95°, cooled to 30° (40° gives somewhat less pure product) 2–3 hrs., and the sepd. 1,5-isomer filtered off and washed with dil. HCl (purity 92–4%); the filtrate treated with 30% or 22% HCl yields the 1,8-isomer of lesser purity. Further clean-up of the 1,5-isomer is best done by stirring 100 parts semipure product into 300 parts 5% Na_2SO_3, 1 hr. at 80°, cooling, filtering, and washing. The 1,8-isomer is best purified after $PhNH_2$ treatment by stirring with 2 parts 80% H_2SO_4, 1 hr. on a steam bath, cooling, filtering, and washing with a little H_2SO_4, then with water. G. M. Kosolapoff

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Anthracene derivatives. VIII. Structure and absorption spectra of rubicene and isorubicene. O. N. Setkina and B. P. Peliurov. *Invest. Akad. Nauk S.S.S.R., Otdel Khim. Nauk* 1949, 545-50; cf. *C.A.* 42, 1585b. Ultraviolet absorption spectra of rubicene (I) and isorubicene (II), perpl. from the corresponding diols, gave the following max.: I—501, 495, 375, 357, 343, 315, 305, 293, 278, 267, and 257 mμ; II—448, 415, 391, 360, 345, 316, 295, 276, and 265 mμ. The substance taken for II by Clar (*C.A.* 26, 440) is not II, and has the following abs. max.: 513, 481, 446, 431, 391, 363, 324, 312, 294, 280 mμ. I and II show a bathochromic shift in comparison with anthracene (the bands grouped at 391 [80] mμ). Comparison curves of 1,4-dichloro-9,10-dihydroxy-9,10-diphenyldihydroanthracene and the anhydride of 9,10-dichloroanthracene 9,10-endosuccinic acid are given.—these show considerable similarity (no exact frequencies given).

G. M. Kosolapoff

Synthesis of some new aliphatic sultones; derivatives of propane. B. P. Fedorov and I. S. Savel'eva. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1950, 223-32. Heating 60 g. EtCHO, 120 g. 40% formalin, and 1350 ml. H_2O on a steam bath with a jet of steam, with gradual (1 hr.) addn. of slaked lime (75 g. CaO and 300 ml. H_2O), and further heating 2.5-3 hrs., followed by addn. of 60 g. 50% H_2SO_4, filtration, removal of the Ca with $(CO_2H)_2$, evapn., and extn. with abs. EtOH, gave 30% *MeC(CH₂OH)₃* (I), m. 202-3°. I (3.6 g.) heated with 10.6 g. PBr_3 gradually to 100° for 1 hr., followed by sealing the tube and heating for 2 hrs. at 175-80° and 3 hrs. at 185-90°, extn. with hot H_2O, removal of 0.7 g. red P, extn. with 3 portions (50 ml.) of EtOAc, washing the ext., and concn. gave 0.9 g. *C(CH₂Br)₄* (II), m. 159.5-60.5° (from EtOH), and 41.8% *MeC(CH₂Br)₃* (III), b. 109-9°, b. 108-9°, b. 101°, b. 91-5°. Alternate method: 5 g. I heated on a steam bath under a reflux condenser and treated over 30 min. with 16.9 g. PBr_3, kept 30 min. at 100°, then 24 hrs. at 180°, gave 0.6 g. P, 0.7 g. II, and 32.8% III. III (3.1 g.), 2.5 g. EtSH, and EtONa (from 0.92 g. Na and 10 ml. abs. EtOH) kept 6 hrs. in a sealed tube at 145-50° gave, after treatment with EtOH and extn. with Et_2O, 56% *MeC(CH₂SEt)₃*, b. 140-1°; this (1.4 g.) in 8 ml. AcOH with 5 ml. 30% H_2O_2 kept 4 hrs. at 50-60° gave 80% *corresponding sulfone*, m. 124-4.5° (from EtOH). Similar reaction with PrSH gave 71% *MeC(CH₂SPr)₃*, b. 173-5° [*sulfone*, m. 85.5-6.5° (from EtOH)]; BuSH gave 54% *MeC(CH₂SBu)₃*, b. 205-6° [*sulfone* (90%), m. 63-4° (from EtOH)]; iso-AmSH gave 53% *MeC(CH₂SAm-iso)₃*, b. 212-3° [*sulfone* (85%), m. 99.5-100.5° (from EtOH)]. Similar reactions with II yielded: *C(CH₂SBu)₄*, 91%, b. 225-9° [*tetrasulfone* (91%), m. 108-9° (from EtOH)]; *C(CH₂SAm-iso)₄*, b. 230-2° [*tetrasulfone*, m. 99-100° (from EtOH)]. EtONa (from 10.35 g. Na and 200 ml. abs. EtOH) satd. with H_2S was treated with 41.1 g. iso-BuBr, kept 3 hrs. at 35-40°, and let stand overnight, giving 40% *tert-BuSH*, b. 63-7°, and 48% less pure product, b. 68-71°. Addn. of 11.9 g.

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$(CH_2)_4Br_2$ to 10.6 g. *tert*-BuSH and EtONa (from 3 g. Na and 50 ml. EtOH) and warming on a steam bath gave 60% $CH_2(CH_2SCMe_3)_2$, b$_{0.5}$ 120°; this with $KMnO_4$ in 10% H_2SO_4 gave 4.4 g. *disulfone*, m. 123–4° (from EtOH); a similar reaction with iso-AmSH gave 55% $CH_2(CH_2SAm\text{-}iso)_2$, b$_5$ 147–8°, which yielded 15% *disulfone*, m. 111.2° (from EtOH) (very pure sample, m. 143.5°). MeSH, from 70 g. *S*-methylthiourea sulfate, was passed into 50 g. Me_2CO at −5° and the soln. treated at −2° with dry HCl for 0.75 hr.; the org. layer, after washing with dil. NaOH, gave $Me_2C(SMe)_2$, as a yellow oil, yielding with $KMnO_4$ in 5% AcOH or H_2SO_4, 21% crude $Me_2C(SO_2Me)_2$, m. 110.5–17.0° (from EtOH). The reaction of I with PhIO appears to go by the route: $4\,I + 4\,ArIO_2 \rightarrow 4\,III + 3\,II + O_2 + 4\,ArIO$.

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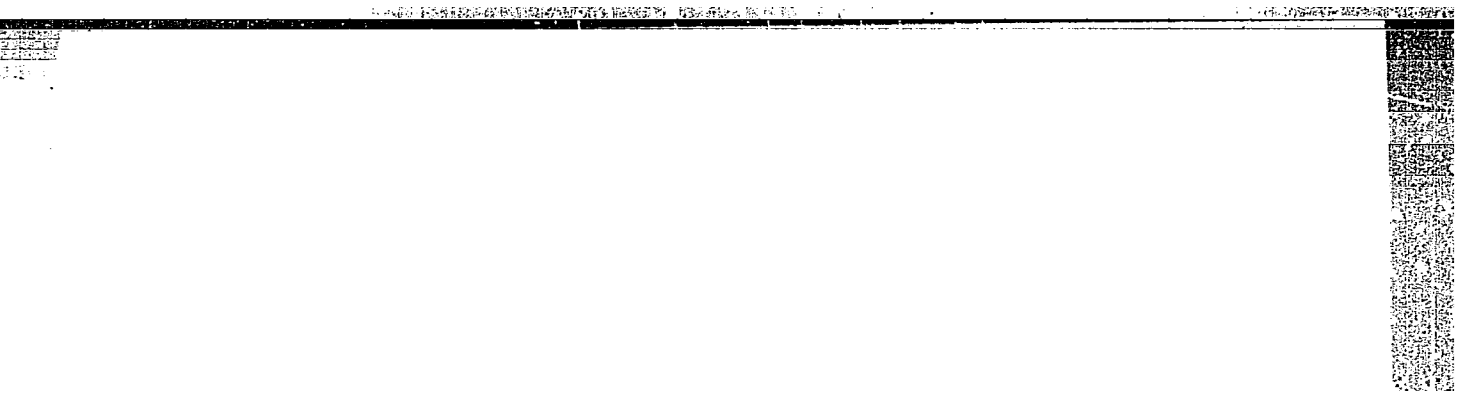
Anthracene derivatives. IX. Syntheses of *m*-chloro-substituted derivatives of 2-anthrol and 2-anthramine. B. P. Fedorov. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1951, 582-92; cf. *C.A.* 44, 1333g.—K 2-anthracenesulfonate (40 g.) heated in an autoclave with 200 g. 40% KOH 4 hrs. to 235° gave 61% crude *2-anthrol*, m. 170-98°. The same product, m. 190-2°, forms in 81% yield when 10 g. 2-hydroxyanthraquinone is heated briefly with 100 ml. H_2O and 10 ml. 25% NH_4OH, 80 ml. EtOH and fresh Al-Hg added, then, dropwise, 80 ml. 25% NH_4OH at 80°, the mixture heated 1 hr., the filtrate acidified, and the ppt. estd. with NaOH. The Al-Hg is prepd. best by treating 6.1 g. granular Al twice with 5% NaOH for 3 min., once with 1% HCl, washing with H_2O, adding 9 g. $HgCl_2$ in 1 l. H_2O (3-min. contact), and washing with H_2O and EtOH. The 2-anthrol (I) (7 g.) heated 4 hrs. on a steam bath with 45 ml. Ac_2O and 20 drops pyridine gave 58% *acetate* (II), m. 198–8.5° (from C_6H_6), which, hydrolyzed with hot AcOH-HCl 1 hr., gave pure I, softening 234°, m. 241°. I heated 6 hrs. to 125–30° in a sealed tube with excess $(NH_4)_2SO_3$ and 28% NH_4OH gave 92% *2-anthramine*, m. 237–8° (from Me_2CO), which, boiled with Ac_2O gave 100% *N-Ac deriv.*, m. 229–40° (from EtOH). II in polychlorobenzene soln. treated with Cl in AcOH at 5–7° over 1 hr. and stirred 2 hrs. at room temp. gave crude *m*-Cl *deriv.*, which, crystd. from hot AcOH, gave 15% *9,10-dichloro-2-anthrol acetate*, m. 178–9°, and 64% more sol. *9-chloro-2-anthrol acetate* (III), m. 112–13° (from MeOH); the latter with CrO_3 in AcOH gave *2-acetoxyanthraquinone*, m. 188–9°, while heating with Cu bronze in C_6H_5 to 210°, chromatography on Al_2O_3, washing with C_6H_6, elution with hot Me_2CO, and sapon. by hot 5% NaOH gave *[9,9'-dianthracene]-2,2'-diol*, m. 276–8° (from Me_2CO). Boiling the 9,10-di-Cl deriv. with CrO_3 in AcOH gave *2-acetoxyanthraquinone* also. III (2.7 g.) in 150 ml. hot AcOH boiled 1 hr. with 50 ml. concd. HCl in 50 ml. AcOH, and dild. with 400 ml. hot H_2O gave 70% *9-chloro-2-anthrol* (IV), purified by chromatography on Al_2O_3 (in MeOH), m. 179–9.5° (from C_6Cl_6), sol. in cold NH_4OH or NaOH, insol. in cold Na_2CO_3 soln. Boiling 9,10-dichloro-2-anthrol acetate 45 min. with 5 *N* NaOH gave *9,10-dichloro-2-anthrol*, m. 208–7° (from C_6Cl_6). IV (1.4 g.), 2.5 g. $(NH_4)_2SO_3$, and 10 ml. 28.8% NH_4OH after 8 hrs. in sealed tube at 125–30°, treatment with dil. NaOH, and acidification of the filtrate gave some 0.25 g. unreacted material, while the alkali-insol. portion yielded 80% *9-chloro-2-anthramine*, m. 130–30.5° (after chromatography on Al_2O_3 in EtOH); the product does not diazotize normally, while treatment with AmONO in EtOH and HCl gave a red isonitroso deriv. Similar treatment with NH_4OH-$(NH_4)_2SO_3$ of 9,10-dichloro-2-anthrol (12 hrs. at 145–50°) gave 90% crude *9,10-dichloro-2-anthramine*, m. 197–8° (from EtOH), which also does not diazotize normally. I (1.15 g.) 4.6 g. $NaHSO_3$, 0.03 g. $PhNH_2$, and 5 ml. H_2O after 8 hrs. at 140–5° gave 0.6 g. *9-chloro-2-(N-phenyl)anthramine*, red-violet, m. 130–40° (from C_6H_6-petr. ether). I heated with fresh Na_2SO_3 10 hrs. to 130–40° gave 0.57 g. unreacted material and an unstated yield of *2-anthrol-9-sulfonic acid*, isolated as *Na salt* (from EtOH); with dil. hot H_2SO_4 it yields 2-anthrol. The sulfonate *couples* very slowly with *p*-$O_2NC_6H_4N_2Cl$ or *diazotized benzidine*; the latter yields a cherry-colored *dye*.

G. M. Kosolapoff

FEDOROV, B.P.; PTITSINA, N.V.

Anthracene derivatives. X. Relative activity of ms-carbon atoms of anthracene and 9,10-dichloroanthracene in reactions with oxidising agents. Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci. '52, 135-47 [Engl. translation].
(CA 47 no.19:9950 '53)



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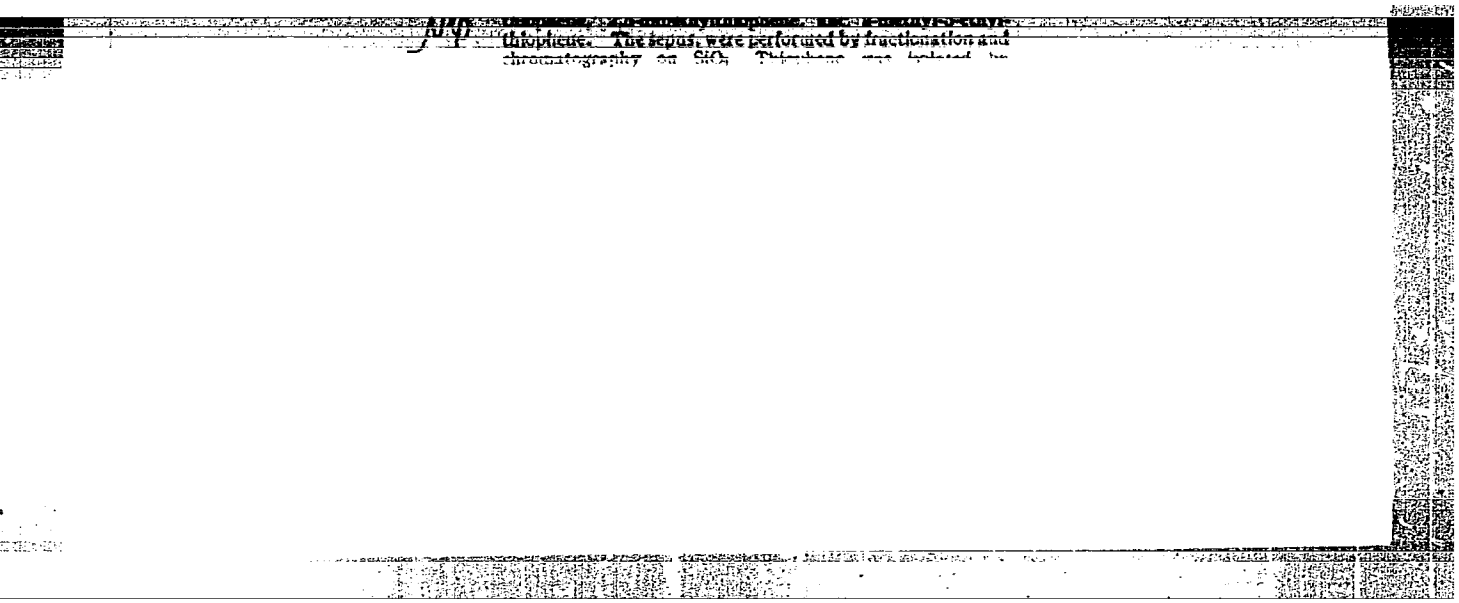

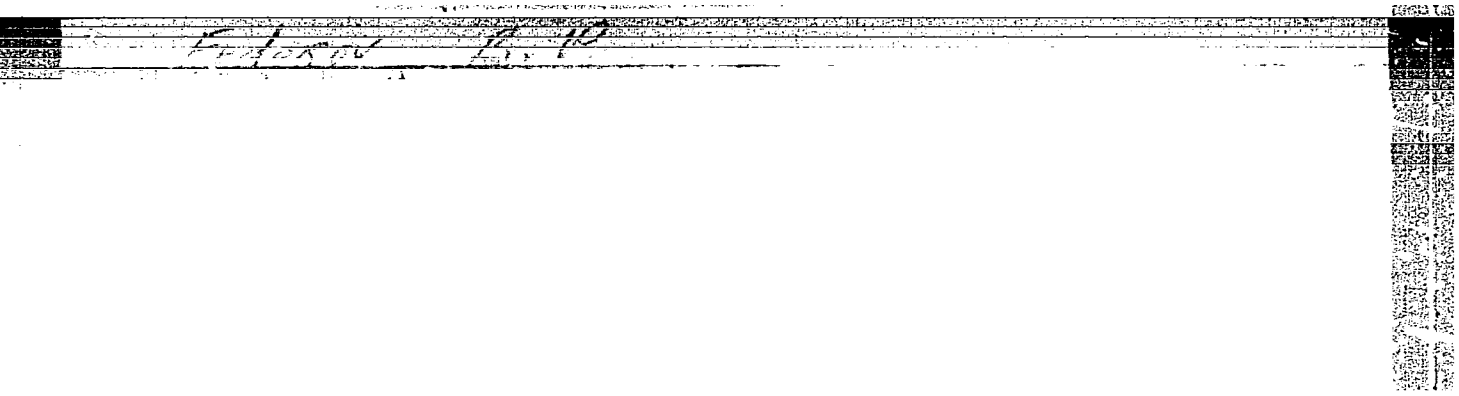

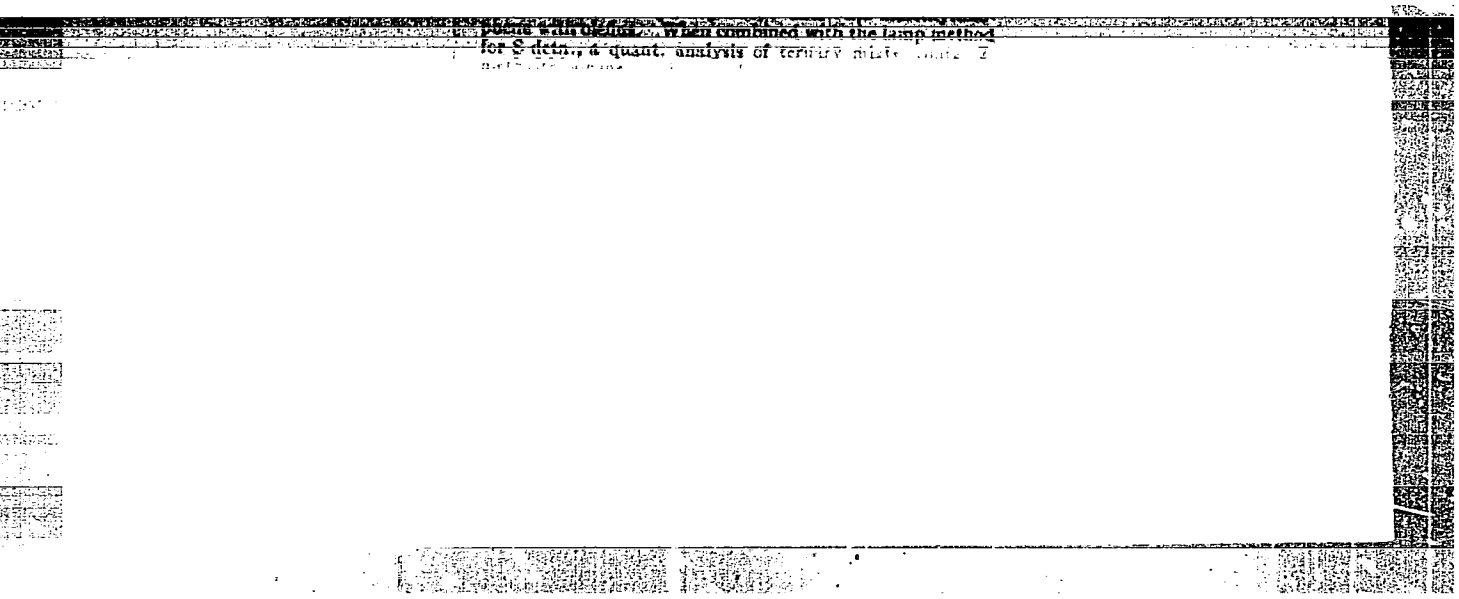

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000412620004-2"

FEDOROV, B. P.

О СОСТАВЕ СОЕДИНЕНИЙ РЯДА БЕНЗОЛА
И ТИОФЕНА В ЛЕГКИХ ФРАКЦИЯХ СМОЛЫ
ТЕРМИЧЕСКОГО РАЗЛОЖЕНИЯ СРЕДНЕЭОЦЕНОВЫХ
СЛАНЦЕВ САВЕЛЬЕВСКОГО МЕСТОРОЖДЕНИЯ

В. П. Федоров, Н. А. Гольдфарб, Г. В. Горушкина

VIII Mendeleyev Congress for General and Applied Chemistry
Section of Chemistry and Chemical Technology of Fuels,
publ. by Acad. Sci. USSR, Moscow 1959

abstracts of reports scheduled to be presented at above mentioned congress,
Moscow, 19 March 1959.

FEDOROV, B.P.

SOV/80-32-2-32/56

AUTHORS: Angert, L.G., Gol'dfarb, Ya.L., Gorushkina, G.I., Zenchenko, A.I., Kuz'minskiy, A.S., Fedorov, B.P.

TITLE: Syntheses of Some Thiophene Derivatives and the Study of Their Behavior as Ingredients of Resins (Accelerators and Antioxidants) ((Sintezy nekotorykh proizvodnykh tiofena i izucheniye ikh povedeniya v kachestve ingredientov smol (uskoriteley i antioksidantov))

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol XXXII, Nr 2, pp 408-418 (USSR)

ABSTRACT: A total of 15 compounds of the thiophene series were investigated as ingredients of resin mixtures. They all contained the azomethine group $XC_4H_2SCH = NRY$, where X is hydrogen or CH_3 -, R an aliphatic or aromatic radical, Y a substituting group. Secondary amines were prepared by heating thenyl dichloride with amines in a solution of benzene or toluene. The products of this reaction, their melting and boiling points, analyses and yields are given in Table 2. These compounds inhibit the oxidation of rubber. The inhibiting action is due to the nature of the ortho- and paragroups in the benzene ring. As a control sample rubber containing phenyl-β-naphthylamine was used in the experiments. The thenyl group $C_4H_3SCH_2$- has nearly the same inhibiting influence

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as the phenyl group. The most pronounced effect have the inhibitors 5-methyl-2-thenylidene-n-aminophenol, 2-thenyl-β--naphthylamine, etc. The synthetized compounds were tested also as vulcanization accelerators on the rubbers SKB, SKS-30, SKN-26 and NK. Most effective were 2-mercapto-4-(2'-thienyl)--thiazole and di-2-thenylideneethylenediamine. The thenylidene group had a greater effect on vulcanization acceleration than the benzene ring.
There are 5 tables, 1 graph and 20 references, 10 of which are Soviet, 3 American, 3 English, 2 German, and 2 French.

SUBMITTED: May 13, 1957

Card 2/2

S/062/60/000/010/023/031/XX
B002/B060

AUTHORS: Fedorov, B. P., and Stoyanovich, F. M.

TITLE: A New Reaction of Mercaptans With N-Substituted Formamides and Phosphoroxy Chloride

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. 10, pp. 1828-1833

TEXT: A novel compound, N,N-dimethyl amino-di-(isobutyl mercapto)-methane results in 36% yield on reaction of dimethyl formamide with isobutyl mercaptan in the presence of phosphoroxy chloride at low temperature. Also synthesized were: N,N-dimethyl amino-di(n-butyl mercapto)-methane from n-butyl mercaptan in 41% yield, and N,N-dimethyl amino-di (tert-butyl mercapto)-methane from tert-butyl mercaptan in 11% yield. The reaction comes about only with $POCl_3$, not with dry hydrogen chloride nor zinc chloride. If N-methyl formanilide is used instead of dimethyl formamide, i-butyl ester of orthotrithio formic acid is formed (44% yield), as well as n-butyl ester of orthotrithio formic acid (69% yield). Moreover, N-methyl aniline is formed.

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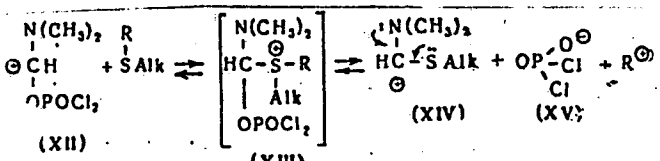
A New Reaction of Mercaptans With N-Substituted Formamides and Phosphoroxy Chloride

S/062/60/000/010/023/031/XX
B002/B060

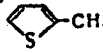
The following mechanism is assumed for the formation: the reaction with phosphoroxy chloride leads to the formation of the strongly electrophilic cation (XII), the latter reacts with the electron pair of sulfur to give the sulfonium complex (XIII); cation R^+ is then split off, and orthophosphoric acid dichloride (XV) is formed. There are 12 references: 2 Soviet, 9 US, 2 British, 7 German, 1 Italian, 3 French, and 1 Swedish.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: May 4, 1959



(XII) (XIII) (XIV) (XV)

4) R = H. 4') R = 

Card 2/2

S/062/60/000/010/024/031/XX
B002/B060

AUTHORS: Fedorov, B. P. and Stoyanovich, F. M.

TITLE: Syntheses of Some Aldehydes From Sulfides of the Thiophene Series

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdelendye khimicheskikh nauk, 1960, No. 10, pp. 1834-1837

TEXT: The following 5-(alkyl mercapto methyl)-2-thiophenaldehydes were synthesized by reaction of dimethyl formamide with alkyl-(5-lithium-2-thenyl)-sulfides: 5-ethyl mercapto methyl-2-thiophenaldehyde, 5-isobutyl mercapto ...thyl-2-thiophenaldehyde, and 5-tert-butyl mercapto methyl-2-thiophenaldehyde. Yields were 21-34%; reactions were to a considerable extent accompanied by resinification due to the unstable character of aldehydes with the methylene mercapto group $-CH_2S-$. The aldehydes obtained were identified by semicarbazones and dinitrophenyl hydrazones. Moreover, the following azomethins were synthesized with p-amino phenol: 5-ethyl mercapto methyl-2-thenylidene-p-amino phenol, 5-isobutyl mercapto methyl-2-thenylidene-p-amino phenol, and

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Syntheses of Some Aldehydes From Sulfides of the Thiophene Series

S/062/60/000/010/024/031/XX
B002/B060

5-ethyl mercapto-2-thenylidene-p-amino phenol. Ya. Gol'dfarb and G.Gorushkina are mentioned. There are 9 references: 5 Soviet, 4 US, and 2 German.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR
(Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: May 4, 1959

Card 2/2

KUZ'MINSKIY, A.S., GOL'DFARB, Ya.L., FEDOROV, B.P., ZENCHENKO, A.I., KOGERMAN, A.P., GORUSHKINA, G.I., ANGERT, L.G.

Synthesis of some thiophene derivatives and study of their behavior as ingredients of rubber accelerators and antioxidants). Zhur.prikl.khim. 33 no.5:1182-1187 My '60. (MIRA 13:7)
(Thiophene) (Vulcanization)

FEDOROV, B.P.; STOYANOVICH, F.M.

Syntheses of aldehydes from 2-thienyl-(ρ-hydroxphenyl) and 2-thienyl-(ρ-methoxyphenyl sulfides. Part 3. Zhur. ob. khim. 31 no.1:238-244 Ja '61. (MIRA 14:1)

1. Institut organicheskoy khimii Akademii nauk SSSR.
(Sulfide) (Aldehydes)

FEDOROV, B.P.; GORUSHKINA, G.I.; GOL'DFARB, Ya.L.

Synthesis of secondary amines of the thiophene series.
Zhur.ob.khim. 31 no.12:3933-3939 D '61. (MIRA 15:2)
(Amines)
(Thiophene)

FEDEROV, B.P.; MAMEDOV, R.M.

Syntheses of some derivatives of 2-mercaptomethylbenzimidazole. Izv. AN SSSR. Otd. khim. nauk no.9:1626-1630 S '62. (MIRA 15:10)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
(Benzimidazole)

KOGERMAN, A.P.; FEDOROV, B.P.

Syntheses of some thienyl- and thenylamides of 2,3-hydroxynaphthoic and salicyclic acids. Zhur.ob.khim. 32 no.3:981-983 Mr '62. (MIRA 15:3)
(Naphthoic acid) (Salicylic acid)

FEDOROV, B.P.; STOYANOVICH, F.M.

Synthesis of arylamines of the thiophene series containing a thioether group. Zhur.ob.khim. 32 no.5:1518-1525 My '62. (MIRA 15:5)

(Thiophene) (Amines)

STOYANOVICH, F.M.; FEDOROV, B.P.; ANDRIANOVA, G.M.

Reactions of amidomercaptals with compounds containing the primary amino group. Dokl.AN SSSR 145 no.3:584-587 Jl '62.
(MIRA 15:7)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR. Predstavleno akademikom B.A.Kazanskim.

(Mercaptals) (Amino group)

LUKOVNIKOV, A.F.; FEDOROV, B.P.; VASIL'YEVA, A.G.; KRASNYANSKAYA, E.A.; LEVIN, P.I.; GOL'DVARB, Ya.L.

Benzimidazole derivatives as inhibitors of the oxidation of polypropylene and the effect of p-hydroxydiphenylamine on their effectiveness. Vysokom. soed. 5 no.12:1785-1789 D '63. (MIRA 17:1)

1. Institut khimicheskoy fiziki AN SSSR i Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

FEDOROV, B.P.; STOYANOVICH, F.M.

Synthesis and reactions of 2,2'-dithienyl sulfide. Part 5.
Zhur.ob.khim. 33 no.7:2251-2261 Jl '63. (MIRA 16:8)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.
(Sulfides) (Bithiophene)

POPOV, Ye.M.; STOYANOVICH, F.M.; FEDOROV, B.P.; ANDRIANOVA, G.M.

Ultraviolet and infrared spectra of 2-thienyl sulfides. Part 6. Zhur.ob.khim. 33 no.7:2261-2266 Jl '63. (MIRA 16:8)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.
(Bithiophene--Spectra) (Sulfides)

STRUCHKOV, V.I. (Moskva, I. Truzhennikov pereulok, d.19, kv.37); GRIGORYAN, A.V.; FEDOROV, B.P.

Treatment of some pulmonary diseases in conjunction with diabetes mellitus in the surgical clinic. Grud. khir. 6 no.2:90-95 Mr-Ap '64. (MIRA 18:4)

1. Kafedra obshchey khirurgii lechebnogo fakul'teta I Moskvskogo ordena Lenina meditsinskogo instituta imeni Sechenova.

ACCESSION NO: AP4017630

S/0190/64/006/002/0201/0205

AUTHORS: Lukovnikov, A. F.; Fedorov, B. P.; Stoyanovich, F. M.; Bulgakova, T. A.; Levin, P. I.

TITLE: Arylamines of the thiophene series with a thioether group as antioxidants

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 2, 1964, 201-205

TOPIC TAGS: antioxidant, polypropylene, polypropylene antioxidant, thiophene, thenyl compound, thioether group, arylamine, stabilization, functional stabilizing group, phenyl compound, Neozone, sulfide, oxidation, p phenolamine, induction period

ABSTRACT: The performance of sulfides of the thiophene series containing an arylamine group as inhibitors of polypropylene oxidation was studied at 200C in an atmosphere of oxygen. It was found that the arylamines of the thiophene series are generally equal (in some instances even superior) as antioxidants to the commercial Neozones. It was also observed that the presence of a thenyl or a benzyl radical in the arylamine molecule had a favorable effect on the effectiveness of the compound. The sulfides of the thiophene series as such do not possess any anti-oxidative properties in respect to polypropylene. It was also shown that the

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ACCESSION NO: AP4017630

thioether group does not enhance the effectiveness of arylamine either when added separately or when the thioether group forms a part of the amine molecule. The presence of a thioether group in p-aminophenol derivatives results in increased effectiveness of the compounds as antioxidants, especially where the sulfide sulfur is directly bound to the thiophene group. Orig. art. has: 1 table and 3 charts.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo AN SSSR, (Institute of Organic Chemistry AN SSSR); Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics AN SSSR)

SUBMITTED: 19Jul62 DATE ACQ: 23Mar64 ENCL: 00

SUB CODE: CH NO REF SOV: 003 OTHER: 004

Card 2/2

MANEDOV, R. M.; FEDOROV, B. P.

Syntheses and transformations of some derivatives of 2-(mercaptomethyl) benzimidazole. Izv AN SSSR Ser Khim no. 4: 698-704 Ap '64. (MIRA 17:5)

1. Institut organicheskoy khimii im. N. D. Zelinskogo AN SSSR.

FEDOROV, B.P.; STOYANOVICH, F.M.

Synthesis and reactions of tert-butylthienyl sulfides. Part 7.
Zhur. org. khim. 1 no.1:194-200 Ja '65. (MIRA 18:5)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.

MAMEDOV, R.M.; MALKINA, A.Ya.; FEDOROV, B.P.

Antifungous activity of certain S-substituted 2-(mercaptomethyl)-benzimidazole. Azerb. khim. zhur. no.3:61-63 '65.
(MIRA 19:1)

1. Institut organicheskoy khimii AN SSSR.

STOYANOVICH, F.M.; FEDOROV, B.P.

Synthesis and reactions of 2,3-and 3,3-dithienyl sulfides. Part 8. Zhur. org. khim. 1 no.7:1282-1292 Jl '65. (MIRA 18:11)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.

IVANOVA, I.A.; FEDOROV, B.P.; STOYANOVICH, F.M.

Synthesis and transformations of amidomercaptals. Izv.AN SSSR. Ser.khim. no.12:2179-2187 '65. (MIRA 18:12)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR. Submitted July 16, 1965.

L 21560-66 EWT(m)/EWP(j) IJP(c) RM

ACC NR: AP6009794 SOURCE CODE: UR/0062/000/002/0268/0274 27 B 26

AUTHOR: Fedorov, B. P.; Lukovnikov, A. F.; Mamedov, R. M.; Yedemskaya, V. V.; Sukhov, V. A.

ORG: Institute of Chemical Physics, Academy of Sciences SSSR (Institut khimicheskoy fiziki Akademii nauk SSSR); Institute of Organic Chemistry im. N. D. Zelinskiy, Academy of Sciences SSSR (Institut organicheskoy khimii Akademii nauk SSR)

TITLE: Synthesis of some S-substituted 2-(mercaptomethyl)benzimidazoles and a study of their inhibition of polypropylene oxidation

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 2, 1966, 268-274

TOPIC TAGS: polypropylene, oxidation inhibition, polymer additive, benzimidazole derivative

ABSTRACT: Previous work had shown that the effectiveness of 2-mercaptobenzimidazole derivatives as inhibitors of polypropylene oxidation depends on the presence of the sulfhydryl group, or on the nature of the substituents at the sulfhydryl group. The present work deals with the synthesis and properties of S-substituted 2-(mercaptomethyl)benzimidazoles. A number of compounds were prepared and their inhibiting effect on the oxidation of isotactic polypropylene at 200C and pO_2 = 200 mm was investigated. The compounds and the induction periods observed on addition of inhibitors are given in the table:

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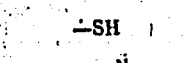
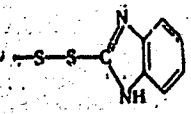
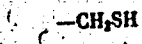
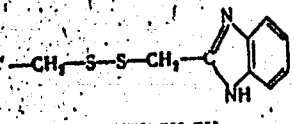
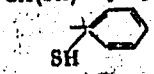
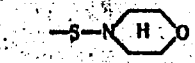
L 21560-66

ACC NR: AP6009794

Table 1. Results of measuring induction periods of benzimidazole derivatives

Number	R	mp, °C	Induction period in min, for concentration M/kg			
			0,02	0,05	0,07	1,0
I		305—308 [1]	55	120	210	265
Ia		228—230 [1]	15	190	270	295
II		156—158 [2]	45	55	70	80
IIa		180—181 [1]	45	55	50	80
III		222	10	50	100	150
IV		209—210	20	25	30	40
V		266—267	12	15	18	35
VI		208—209 [1]	15	38	50	80

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L 21560-66
ACC NR: AP6009794 Table 1. (Cont.)

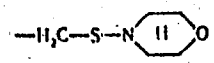
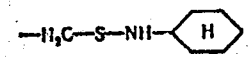
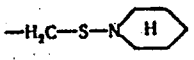
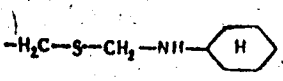
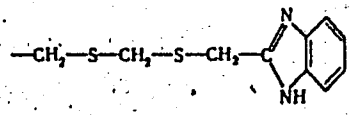
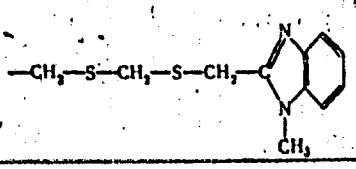
Number	R	mp, °C	Induction period in min. for concentration M/kg. 0,02	0,05	0,07	1,0
VII		97—98 [2]	20	40	60	90
VIII		218—219 [3]	20	70	80	100
IX		245—247 [3]	30	140	220	300
X		182—183	20	75	90	100
XI		219—220 [3]	10	30	40	40
XII*		207—208	20	30	80	90

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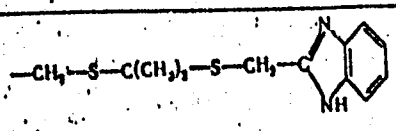
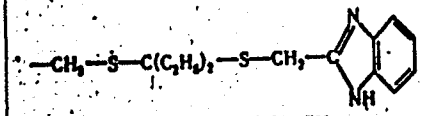
Table 1. (Cont.)

Number	R	mp, °C	Induction period in min. for concentration M/kg			
			0.02	0.05	0.07	1.0
XIII		223—224	25	55	180	250
XIV		249—250	10	10	20	20
XV	$-H_3C-S-CH_2CH_2CH_2CH_3$	145—146 [2]	15	18	20	180
XVI	$-H_3C-\overset{\overset{O}{\downarrow}}{S}-CH_2CH_2CH_2CH_3$	132—133	20	340	450	400
XVII	$-H_3C-S-H_2C-C_6H_5$	141—142 [2]	50	75	100	110
XVIII	$-H_3C-\overset{\overset{O}{\downarrow}}{S}-H_2C-C_6H_5$	165—166	30	60	105	120
XIX	$-H_3C-SO_2-H_3C-C_6H_4$	206—208	Inactive			

*In (XII) both hydrogen atoms at the NH groups are replaced by CH_3 groups.

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ACC NR: AP6009794

The authors found that in the presence of hydroperoxides some amines react with mercaptans to form sulfenamides. They suggest that this may account for the synergistic effects observed when mixtures of amines and mercaptans are used as antioxidants. Orig. art. has: 2 figures and 1 table. [VS]

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ATD PRESS: 4219

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STRUCHKOV, V.I.(Moskva, Trushennikov, per., d.19, kv. 37); SKRIPNICHENKO, D.F.; FEDOROV, B.P.; PARFENOV, A.P.

Changes in cardiovascular activity during and after radical surgery of the lungs [with summary in English p.159] Vest.khir. 77 no.7:64-70 Jl '56. (MLRA 9:10)

1. Iz kafedry obshchey khirurgii lechebnogo fakul'teta (zav. - prof. V.I.Struchkov) 1-go Moskovskogo ordena Lenina meditsinskogo instituta
(LUNGS, surg.
perop. & postop. changes in cardiovascular. activity)
(CARDIOVASCULAR SYSTEM, physiol.
perop. & postop. changes in lung surg.)

FEDOROV, B.P.

Changes in certain hemodynamic indices during radical surgery in chronic suppurative processes of the lungs. Sov. med. 22 no.12:27-31 D '58. (MIRA 12:1)

1. Iz kliniki obshchey khirurgii (zav. - prof. V.I. Struchkov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I. M. Sechenova na baze bol'nitsy imeni Medsantrud (glavnyy vrach A.P. Timofeyeva).

(LUNG DISEASES, surg.
chronic suppurations, hemodynamic changes (Rus))
(BLOOD CIRCULATION, in various dis.
chronic lung suppurations, hemodynamic changes during surg. (Rus))

FEDOROV, B.P.

Venous pressure and the circulation rate during radical operations for chronic suppurative processes in the lungs. Grud.khir. 2 no.2: 104-107 Mr-Ap '60. (MIRA 16:7)

1. Iz kliniki obshchey khirurgii (zav.- prof. V.I.Struchkov) I Moskovskogo ordena Lenina meditsinskogo instituta na baze bol'nitsy imeni "Medsantrud" (glavnyy vrach A.P.Timofeyeva).
(BLOOD PRESSURE) (BLOOD-- CIRCULATION)
(LUNGS--SURGERY)

STRUCHKOV, Viktor Ivanovich, prof.; BAZHENOVA, A.P., doktor med. nauk; TUMANSKIY, V.K., doktor med. nauk; GRIGORYAN,A.V., kand.med. nauk; KACHKOV,A.P., kand.med.nauk; MARSHAK,A.M., kand.med.nauk; MURAV'YEV,M.V., kand.med.nauk; SIDORINA,F.I., kand.med.nauk; FEDOROV,B.P., kand.med.nauk; VINOGRADOV,V.V., red.; PETROVA, tekhn. red.

[Surgery for suppuration]Gnoinaia khirurgiia; rukovodstvo dlia vrachei. Moskva, Medgiz, 1962. 357 p. (MIRA 15:11)
(SUPPURRATION) (SURGERY, OPERATIVE)